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THE JOURNAL

OF THE

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OF

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NOTICE.

To facilitate reference to the contents of this *Journal*, and to make it a more convenient record of the work of the Institute, the Council has authorised the following amendment of its form :—

Each volume of the *Journal* will henceforth contain the papers presented to the Institute between January and December of the calendar year; and the President's Address, delivered at the Annual Meeting in January, will form the introduction to each volume.

Consequently the latter part of Vol. XXIX (= Vol. II of the new royal octavo series) contained only those papers which were presented before the end of 1899; while Vol. XXX (= Vol. III of the new series) contains those which are presented between January and December, 1900; and opens with the President's Address delivered in January, 1900.

For convenience of reference, also, greater prominence is given to the number of a volume in continuation of the old series, than to its number in the new (royal octavo) series. Thus the current volume is described as Vol. XXX (= New Series, Vol. III).

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CONTENTS.

	PAGE
Proceedings of the Annual Meeting of the Institute, with the Reports of Treasurer and Council	1
I. Presidential Address. By C. H. READ, F.S.A.	6
II. The Oak and the Thunder-God. By H. MUNRO CHADWICK, M.A., Fellow of Clare College, Cambridge	22
III. Notes on some Caves in the T'Zitzikama or Outeniqua District, near Knysna, South Africa, and the objects found therein. By HENRY D. R. KINGSTON, M.D. (With Plate I)	45
IV. Notes on the Galla of Walega and the Bertat. By REGINALD KOETTLITZ, M.D.	50
V. The Stone Circles of Scotland. By A. L. LEWIS, F.C.A., Treasurer of the Anthropological Institute	56
VI. A Genealogical Method of Collecting Social and Vital Statistics. By W. H. R. RIVERS, M.A., M.D. (With Plates II, III)	74
VII. Stone Implements from Pitcairn Island. By JOHN ALLEN BROWN, F.G.S., F.R.G.S. (With Plate IV)	83
VIII. On the Earliest Communications between Italy and Scandinavia. By Professor OSCAR MONTELIUS. (With Plates V-VIII)	89
IX. Recent Anthropometrical Work in Egypt. By DAVID MACIVER, M.A. (With Plates IX, X)	95
X. The Physical Characteristics of Adults and School Children in East Aberdeenshire. By JOHN GRAY, B.Sc., and JAMES F. TOCHER, F.I.C. (With Plates XI-XVI)	104
XI. A Contribution to Eskimo Craniology. By W. L. H. DUCKWORTH, M.A., and B. H. PAIN, B.A. (With Plates XVII, XVIII)	125
XII. On a Collection of Crania, with Two Skeletons, of the Mori-ori, or Aborigines of the Chatham Islands. With a Note on some Crania from the same Islands now in the Museum of the Royal College of Surgeons. By W. L. H. DUCKWORTH, M.A., Jesus College, Lecturer on Physical Anthropology in the University of Cambridge	141
XIII. The System of Writing in Ancient Egypt. By F. LL. GRIFFITH	153
XIV. The Metric System of Identification of Criminals, as used in Great Britain and Ireland. By J. G. GARSON, M.D.	161
XV. Mycenæan Cyprus as illustrated in the British Museum Excavations. By ARTHUR J. EVANS	199
XVI. A Classification of the Stone Clubs of British New Guinea. By ALFRED C. HADDON, Sc.D., F.R.S., University Lecturer of Ethnology, Cambridge. (With Plates XIX-XXIII)	221

	PAGE
XVII. A Primitive Figurine from Adalia. By JOHN L. MYRES, M.A., F.S.A. (With Plate XXIV)	251
XVIII. On Stone Implements from Tasmania. Extracts from a Letter by J. PAXTON MOIR. Communicated by Professor E. B. TYLOR, F.R.S. (With Plate XXVI)	257
XIX. On the Paganism of the Civilised Iroquois of Ontario. By DAVID BOYLE, Curator of the Archæological Museum of Ontario... ..	263
XX. Notes on the History of Vumba, East Africa. By A. C. HOLLIS. (With Plates XXVII-XXIX)	275
XXI. Unclassified Worked Flints. By H. STOPES. (With Plates XXX- XXXV)	299
XXII. Survivals Among the Kappadokian Kizilbash (Bektash). By J. W. CROWFOOT. (With Plates XXXVI, XXXVII)	305

ANTHROPOLOGICAL REVIEWS AND MISCELLANEA.

N.B.—*These should be quoted, as here, by marginal number, and not by the page.*

	No.
Man, a Monthly Record of Anthropological Science	1
A Summary of the Proceedings of the Anthropological Institute of Great Britain and Ireland: January-June, 1900 (<i>continued</i> , No. 120)	2 to 10
Regulations for the Use of the Loan Collection of Lantern Slides, organised, jointly, by the Anthropological Institute of Great Britain and Ireland and by the Folklore Society	11
Anthropometry: General. Communication from Dr. W. H. R. RIVERS, St. John's College, Cambridge	12
Miss Mary H. Kingsley, 13th October, 1862-3rd June, 1900. Communicated by Miss L. TOULMIN SMITH	13
The Proposed National Memorial to Mary Kingsley	14
Oscar Baumann, Ph.D. 25th June, 1864-12th October, 1899. Contributed by R. W. FELKIN, M.D., F.R.G.S.	15
Exhibition of Algerian and Kabyle Objects. By DAVID RANDALL-MACIVER, B.A., Laycock Student of Egyptology at Worcester College, Oxford, and ANTHONY WILKIN, B.A., of King's College, Cambridge	16
Ginn and Fairies. Communicated by ANDREW LANG	17
The System of Writing in Ancient Egypt. Communicated by F. LL. GRIFFITH, M.A., to the Anthropological Section of the British Associa- tion for the Advancement of Science	18
Die Flexion des ägyptischen Verbums. Von ADOLF ERMANN	19
Perforate Humeri in Ancient Egyptian Skeletons. Communicated by Professor A. MACALISTER, M.D., F.R.S., to the Anthropological Section of the British Association for the Advancement of Science	20
A Collection of Stone Implements in the Mayer Museum, made by Mr. H. W. Seton-Karr. By H. O. FORBES, LL.D. (With Plate A)	21
The Carved Slates from Hierakonpolis and elsewhere. By F. LEGGE. (With Plates B, C, D)	22
Note on a Carved Slate. By Professor W. M. FLINDERS PETRIE	23
"The life of Rekhmara." By PERCY E. NEWBERRY	24

	No.
The Redemption of Egypt. By W. BASIL WORSFOLD, M.A.	25
Grundriss einer Lautlehre der Bantu Sprachen. By CARL MEINHOF	26
Northern Nyasaland. By the Rev. JAMES HENDERSON... ..	27
In Dwarf Land and Cannibal Country. By A. B. LLOYD	28
The Boer States: Land and People. By A. H. KEANE, F.R.G.S.	29
The Imperfection of our Knowledge of the Black Races of the Transvaal and Orange River Colony. Communicated by E. SIDNEY HARTLAND, to the Anthropological Section of the British Association for the Advancement of Science	30
Notes on the Jukos and other Tribes of the Middle Benue. Contributed by Lieutenant H. POPE-HENNESSY	31
In Afric's Forest and Jungle. By Rev. R. H. STONE	32
The Story of the Alphabet. By EDWARD CLODD	33
Flame, Electricity, and the Camera. By GEORGE ILES	34
Note on a Wommera from North Queensland. Communicated by J. EDGE-PARTINGTON	35
The Stone Implements of the Natives of Tasmania. Communicated by J. PAXTON MOIR to the Anthropological Section of the British Association for the Advancement of Science	36
The Stone Age in Tasmania. Communicated by Professor E. B. TYLOR, F.R.S., to the Anthropological Section of the British Association for the Advancement of Science	37
Tasmania. By Sir PHILIP FYSH, K.C.M.G., Agent-General for Tasmania	38
Schnitzereien der Maori aus dem Städtischen Museum in Bremen. Von H. SCHURTZ	39
Note on a Pataka in the Auckland Museum, New Zealand, together with a further Note on a Carved Canoe-Head in the British Museum. Communicated by J. EDGE-PARTINGTON. (With Plate E)	40
The Genesis of the Maori Scroll-Pattern. Communicated by J. EDGE-PARTINGTON	41
New Zealand: Errata	42
Verslag eener reis in de Timor-groep en Polynesië. Door Dr. HERMANN F. C. TEN KATE	43
Beschreibender Catalog der Ethnographischen Sammlung Ludwig Biró's aus Deutsch-New-Guinea (Berlinhafen)	44
Note on an Object of Unknown Use from the Solomon Islands. Communicated by J. EDGE-PARTINGTON. (With Plate E)	45
Crania collected by Mr. J. Stanley Gardiner in his Expedition to Rotuma. Communicated by W. L. H. DUCKWORTH, M.A., Lecturer on Anthropology in the University of Cambridge, to the Anthropological Section of the British Association for the Advancement of Science	46
Note on some Feather-Mats in the British Museum. Communicated by J. EDGE-PARTINGTON. (With Plates F, G)	47
Mangareva Dictionary, Gambier Islands. By EDWARD TREGGAR	48
Note on a Shell Adze from Ambrym Island, New Hebrides. Communicated by J. EDGE-PARTINGTON. (With Plate H)	49
The Inter-relation of Melanesian, Papuan and Polynesian Languages. Von P. W. SCHMIDT, S.V.D.	50
Amerind—a Designation for the Aboriginal Tribes of the American Hemi-	

	No.
sphere. Communicated by Professor W. J. McGEE, President of the Anthropological Society of Washington	51
Aboriginal American Zoötechny. By OTIS T. MASON	52
The Paganism of the Civilised Iroquois of Ontario. Communicated by DAVID BOYLE, Curator of the Museum of Toronto, to the Anthropological Section of the British Association for the Advancement of Science	53
Note on a Copper Shield from the N.W. Coast of America. Communicated by O. M. DALTON	54
Report of the Ethnographic Survey Committee. Presented to the British Association for the Advancement of Science	55
Property Marks of Alaskan Eskimo. By F. BOAS	56
Floats for Alluring Salmon. Communicated by J. EDGE-PARTINGTON ...	57
Extracts from the Diary of Mr. James Strange, H.E.I.C.S. Communicated by COUTTS TROTTER, Esq., F.A.I.	58
Ein Besuch bei den Chirropó- und Talamanca-Indianern von Costarica. Von K. SAPPER	59
The Cordillera of Mexico and its Inhabitants. By O. H. HOWARTH, C.E., F.R.G.S., F.G.S.	60
Note on a Stone Figure from Colombia, S. America. Communicated by O. M. DALTON. (With Plate I, J)	61
An Attempt at a Bibliography of Cyprus. By CLAUDE DELAVAL COBHAM, B.C.L., M.A., M.R.A.S.	62
The Western Rajputana States. By Lieut.-Colonel ARCHIBALD ADAMS, I.M.S., M.D.	63
Note on a Hkoung beht set. Communicated by H. LING ROTH	64
Aśwagrāntā, near Gauhati. By Captain P. R. GURDON, I.S.C.	65
Note on some Tribal and Family Names in Assam. By Major JOHN SHAKESPEAR, C.I.E., D.S.O., I.S.C.	66
Mizo ler vai thon thou (Lushai folk tales). Mizozir tir bu (grammar, etc.). Presented respectively by Major J. SHAKESPEAR, C.I.E., D.S.O., I.S.C., and by the Secretary to the Chief Commissioner of Assam ...	67
Rijk's Ethnographisch Museum. Tentoonstelling van Japansche Kunst. Door Dr. J. D. E. SCHMELTZ, Directeur	68
The Japanese Gohei and the Ainu Inao. Communicated by W. G. ASTON to the Anthropological Section of the British Association for the Advancement of Science	69
Some Peculiar Features of the Animal-cults of the Natives of Sarawak. Communicated by CHARLES HOSE, D.Sc., Resident of the Baram District, and W. McDougall, M.A., to the Anthropological Section of the British Association for the Advancement of Science	70
Relics of the Stone Age of Borneo. Communicated by A. C. HADDON, Sc.D., F.R.S., Lecturer on Ethnography in the University of Cambridge, to the Anthropological Section of the British Association for the Advancement of Science	71
Houses and Family Life in Sarawak. Abstract of a paper communicated by A. C. HADDON, Sc.D., F.R.S., to the Anthropological Section of the British Association for the Advancement of Science	72
The Textile Patterns of the Sea-Dyaks. Communicated by A. C. HADDON,	

	No.
Some Vagaries of the Kephalic Index. Communicated by JOHN BEDDOE, M.D., LL.D., F.R.S., to the Anthropological Section of the British Association for the Advancement of Science	93
Certain Markings on the Frontal Part of the Human Cranium. Communicated by Professor A. FRANCIS DIXON, M.A., to the Anthropological Section of the British Association for the Advancement of Science ...	94
The Sacral Index. Communicated by Professor D. J. CUNNINGHAM, M.D., F.R.S., to the Anthropological Section of the British Association for the Advancement of Science	95
A Text-Book of Physiology. By Professor Sir MICHAEL FOSTER, M.D., F.R.S.	96
Man and his Ancestor: A study in Evolution. By CHARLES MORRIS ...	97
The Races of Man. By J. DENIKER, Sc.D.	98
Mental and Physical Deviations from the Normal among Children in Public Elementary and other Schools. Report of the Committee of the British Association for the Advancement of Science	99
Rij. The Microcephalic Brain. Communicated by Professor D. J. CUNNINGHAM, Modern M.D., F.R.S., to the Anthropological Section of the British Association An Essa for the Advancement of Science	100
CUN system of Classification of Finger-Prints. By J. G. GARSON, M.D., Expert Nene B Adviser on Identification of Criminals	101
ote on a Mould showing the Finger-Prints of a Roman Sculptor, probably of the Third Century A.D. Communicated by Professor Sir WILLIAM TURNER, M.D., F.R.S., to the Anthropological Section of the British Association for the Advancement of Science	102
Physical Anthropology. Cross-References	103
Interpolation in Memory. Communicated by Professor MARCUS HARTOG, M.A., D.Sc., to the Anthropological Section of the British Association for the Advancement of Science	104
The Perception of Force. By Professor G. J. STOKES, M.A., Queen's College, Cork	105
The Psychology of Reasoning. By ALFRED BINET	106
The Nervous System of the Child. By FRANCIS WARNER, M.D.	107
The Experimental Study of Children. By ARTHUR MACDONALD	108
Horns of Honour, and other Studies in the By-ways of Archæology. By FREDERICK THOMAS ELWORTHY	109
Animal Superstitions and Totemism. Communicated by N. W. THOMAS to the Folklore Society	110
Die Finsternisse in der Mythologie und im religiösen Brauch der Völker. Von Dr. RICHARD LASCH	111
Die Behandlung der Leiche des Selbstmörders. By Dr. RICHARD LASCH ...	112
The Amusements of Old London. By WILLIAM B. BOULTON	113
Questions on Animal Superstitions. By N. W. THOMAS	114
Folklore: Cross-References	115
Life beyond Death. By MINOT JUDSON SAVAGE, D.D. (Harvard)	116
Permanent Artificial Skin Marks. Communicated by H. LING ROTH to the Anthropological Section of the British Association for the Advancement of Science	117
Memoirs of the Bernice Pauahi Bishop Museum of Polynesian Ethnology and Natural History. Hawaiian Featherwork. By WILLIAM T. BRIGHAM	118

Sc.D., F.R.S., to the Anthropological Section of the British Association for the Advancement of Science	73
Report on Cambridge Exploring Expedition to the Malay Provinces of Lower Siam. Drawn up by W. W. SKEAT, and presented to the British Association Committee on the National History and Ethnography of the Malay Peninsula	74
Notes on the Anthropological Observations made by Mr. F. Laidlaw. Communicated by W. H. L. DUCKWORTH, M.A., Lecturer on Anthropology in the University of Cambridge, to the Anthropological Section of the British Association for the Advancement of Science	75
Malay Magic. By W. W. SKEAT, with a Preface by C. O. BLAGDEN	76
The "Kingfisher" Type of Kris. Communicated by Professor H. LOUIS, M.A., to the Anthropological Section of the British Association for the Advancement of Science. (With Plate I, J)	77
Notes on Malay Metal-work. Communicated by WALTER ROSENHAIN, B.A., to the Anthropological Section of the British Association for the Advancement of Science	78
A Theory of Universal Grammar. By Colonel R. C. TEMPLE, C.I.E.	59
The Occurrence of Flint Implements of Palæolithic Type on an old Land-surface in Oxfordshire. Communicated by A. M. BELL, M.A., to the Anthropological Section of the British Association for the Advancement of Science	60
The Tenth Report of the Silchester Excavation Fund	80
Some Yorkshire Earthworks. Communicated by Mrs. ARMITAGE to the Anthropological Section of the British Association for the Advancement of Science	81
The Anthropology of West Yorkshire. Communicated by JOHN BEDDOE, M.D., LL.D., F.R.S., to the Anthropological Section of the British Association for the Advancement of Science	82
The Physical Characteristics of the Population of West Aberdeenshire. Communicated by J. GRAY, B.Sc., and J. F. TOCHER, F.I.C., to the Anthropological Section of the British Association for the Advancement of Science	83
Der deutsche Volksaberglaube der Gegenwart. Von Dr. ADOLF WUTTKE	84
Die Tiere in der deutschen Volksmedizin alter und neuer Zeit. Von JOHANNES JÜHLING, mit einem Geleitworte von Hofrath Dr. med. Höfler	85
Bornholm. By Dr. G. BUSCHAN	86
Corfou et le Corfiotes. Par ARTHUR DE CLAPARÈDE, Docteur en droit, President de la Société de Géographie de Suisse, etc.	87
The Cave of Psychró in Crete. Communicated by D. G. HOGARTH, M.A., to the Anthropological Section of the British Association for the Advancement of Science	88
Writing in Prehistoric Greece. Communicated by ARTHUR J. EVANS, M.A., F.S.A., to the Anthropological Section of the British Association for the Advancement of Science	89
Portugalia, Materiaes para o estudo de povo portuguez	90
Developmental Changes in the Human Skeleton. Communicated by DAVID WATERSTON, M.D., F.R.C.S.E., to the Anthropological Section of the British Association for the Advancement of Science	91
	92

CONTENTS.

ix

No.

Bernice Pauahi Bishop Museum, Honolulu, Hawaiian Islands.	By Professor	
BRIGHAM	...	119
A Summary of the Proceedings of the Anthropological Institute of Great Britain and Ireland. (November-December, 1900)	...	120 to 123
Étude de diverses séries de crânes anciens de la vallée du Rhône (Valais).		
EUGÈNE PITTARD	...	124
A Memorial to Dr. Livingstone	...	125
The Aborigines of Tasmania. By H. LING ROTH	...	126
Die Schönheit des weiblichen Körpers. By Dr. C. H. STRATZ	...	127
Publicationen aus dem k. Ethnographischen Museum zu Dresden	...	128
Abhandlungen und Berichte des k. Zoologischen und Anthropologisch-Ethnographischen Museums zu Dresden	...	129
Canada under British Rule, 1760-1900. By Sir JOHN G. BOURINOT, K.C.M.G., LL.D., Litt.D.	...	130
Rijks Ethnographisch Museum te Leiden	...	131
Modern Abyssinia. By AUGUSTUS B. WYLDE	...	132
An Essay on Western Civilisation in its Economic Aspects. By W. CUNNINGHAM, D.D.	...	133
Neue Beiträge zur Anthropologie der Schweiz. Dr. PHIL. OTTO SCHÜRCH	...	134

ILLUSTRATIONS.

PLATES.

to face page

	I.	{ Stone Implements of Flaked Quartzite, from the Knysna caves, South Africa Stone Implements from the neighbourhood of Knysna, South Africa	} 49
	II.	Genealogical Tables from Murray Island... ..	82
	III.	" " " Mabuiag	82
	IV.	Implements from Pitcairn Islands	88
V to VIII.		Bronze Vessels from Scandinavia and other parts	94
	IX.	Chart of Cephalic Indices (Egypt)	102
	X.	Comparison of Egyptian Indices	102
	XI.	Distribution of Pigmentation (Aberdeen)	124
	XII.	" " " " " " " " " " " " " " " "	124
	XIII.	Cephalic Chart. Scotland, Aberdeenshire, E. Table I. 169 persons	124
	XIV.	Cephalic Chart. Scotland, Aberdeenshire, E. Table II. 195 persons	124
	XV.	Cephalic Chart. Scotland, Aberdeenshire, E. 38 fishermen. Table III	124
	XVI.	Cephalic Chart. Scotland. 57 Highlanders. Table IV ...	124
	XVII.	H heads of Eskimos	140
	XVIII.	Views in Norma Facialis (Nos. 1-4) and Norma Lateralis (Nos. 5-8) of four skulls from the University Museum of Human Anatomy at Kiel	140
	XIX.	Stone Clubs of British New Guinea	250

	<i>to face page</i>
XX. Stone Clubs of British New Guinea	250
XXI. " " " " 	250
XXII. " " " " 	250
XXIII. Sketch Map of British New Guinea	250
XXIV. A Primitive Figurine of Black Clay from Adalia	256
XXV. Stone Implements from Tasmania	262
XXVI. " " " " 	262
XXVII. Vumba and Vumba Kuu, E. Africa	297
XXVIII. Neighbourhood of Vumba	297
XXIX. Pedigree of the Diwans of Vumba	297
XXX. Six Views each of Three Implements	304
XXXI. Six Views each of 9 Thick Rough Implements from the Thames Valley Terrace Gravels	304
XXXII. Two Views each of 10 Implements from the Thames Valley Terrace Gravels	304
XXXIII. Two Views each of 11 Graving Tools	304
XXXIV. Two Views each of 18 Graving Tools	304
XXXV. Two Views each of 21 Tools, various	304
XXXVI. Map of Part of Asia Minor to illustrate the distribution of the Bektashis	320
XXXVII. Bektashi Portraits. Mehmed (1). Abbas (9). Full Face and Profile	320
XXXVIII. Bektashi Portraits. Veli Effendi (10). Djaffir (12). Full Face and Profile	320

- A. Bracelets of Flint from Egypt.
- B.
- C. } The Carved Slates from Hierakonpolis and elsewhere.
- D. }
- E. { Maori Carvings from a Pataka or Store-House.
- F. { Object of Unknown Use from the Solomon Islands.
- G. Feather Mats in the British Museum.
- H. { Featherwork Coronet and Wooden Box from Tabiti.
- I. { Head of Shell Adze.
- J. { Shell Adze from Ambrym Island, New Hebrides.
- K. { Stone Figure from Colombia, S. America.
- L. { Handle of "Kingfisher" Kris.
- M. { Handle of "Kingfisher" Kris, Old Pattern.

BLOCKS.

	PAGE
Sacred Pine Tree in a Japanese Village (from a Japanese print)	43
Sketch Map of part of South Africa, between Mossel Bay and Port Elizabeth (Fig. 1).	45
Bone Implement from the Knysna Caves (Fig. 2)	47
Shell Ornament from the Knysna Caves (Fig. 3)	47
Berta Spears (Fig. 1)	52
„ Kulbedah (Fig. 2)	52

	PAGE
Berta Tokul (Fig. 3)	53
" Granary (Fig. 4)	53
Ground-plan (Fig. 1) and Section (Fig. 2) of South-west Cairn and Circle, Clava	64
Ground-plan (Fig. 3) and Section (Fig. 4) of Leys Circle, near Inverness ...	66
Sketches and Plans of "Altar Stones" in Scotch Circles	68
Ground-plan of Daviot Circle	71
Egyptian Femur Maxima (Fig. 1)	97
Libyan Chief (Fig. 2)	100
Prehistoric Egyptian Skull (Fig. 3)	100
Head of Libyan Chief (Fig. 4)	100
Head of Nenkeftka, Fifth Dynasty (Fig. 5)	101
Man of Punt (Fig. 6)	101
Eskimo Craniology (Fig. 1, <i>a, b, c, d</i>)	125
Head Measuring Instrument	175
Black Punctured Ware from Enkomi (Fig. 1)	202
Gold Pins from Enkomi (Fig. 2)	203
Bronze Fibulae from Enkomi (Fig. 3)	204
Objects from Enkomi (Fig. 4)	208
Warrior attacking Griffin (Fig. 5)	209
Chariot Scene on side of Ivory Draught-Box from Enkomi (Fig. 6)	210
Chariot of Rameses III (Fig. 7)	211
Hittite Chariot (Fig. 8)	211
Western Warrior with Cuirass and Plumed Casque (Fig. 9)	213
Bronze Greaves from Enkomi (Fig. 10)	214
Ornamental Ivory Bosses, Mycenæ (Fig. 11, 1 and 2)	215
Ornament on Bronze Greaves, Glasinač (Fig. 11, 3)	215
Copper Ingot: Enkomi (Fig. 12)	215
Engraved Ring: Enkomi (Fig. 13)	216
Inscriptions on Clay Balls from Enkomi (Fig. 14)	217
Iron Sword from Curium (Fig. 15)	218
Stone Clubs of British New Guinea	246
Sketch Map of the Mekeo District	249
<hr/>	
	Miscellanea No.
Map of Benue District	31
Defences of Gatri	31
Wommera from North Queensland	35
Tau-Shield from the N.W. Coast of America	54
Salmon Floats from Vancouver Island	57
"Hkoungh beht set" from Burma	64
Diagrammatic Sections of the Outer Skin, to show the different results of the four methods of skin-marking	117
Memorial to Dr. Livingstone	125

373
1

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- 1901 Preen, Ernest A., Esq., *Conellan, Malvern Link.*
- 1868 Price, F. G. Hilton, Esq., F.S.A., F.G.S., F.R.G.S., 17 *Collingham Gardens, S.W.* (§¶)
- 1863 Pusey, S. E. B. Bouverie, Esq., F.R.G.S., 18 *Bryanston Street, Portman Square; and Pusey House, Faringdon, Berks.*
- 1891 Pye, Randall H., Esq., *Selbourne, 15 Castle Bar Road, Ealing.* (§)
- 1899 Quick, Arthur, Esq., 33 *Brixton Hill, S.W.*
- 1899 Randall-MacIver, David, Esq., M.A., *Wolverton House, Clifton, near Bristol.* (§¶)
- 1868 Ransom, Edwin, Esq., F.R.G.S., 24 *Ashburnham Road, Bedford.* (*)
- 1866 Rao, The Hon. Rajah Sir Goday Naraen Gajapati, *Vizagapatam, India.*
- 1883 Ravenstein, Ernest G., Esq., F.R.G.S., 2 *York Mansions, Battersea Park, S.W.* (§)
- 1890 Ray, Sidney H., Esq., 218 *Balfour Road, Ilford, Essex.* (§¶)
- 1875 Read, Charles H., Esq., F.S.A., VICE-PRESIDENT, Keeper of British and Mediæval Antiquities and Ethnography, British Museum, Foreign Associate of the Anthropological Society of Paris, 22 *Carlyle Square, Chelsea.* (§¶)
- 1886 Reid, Robert William, Esq., M.D., Professor of Anatomy in the University of Aberdeen, 37 *Albyn Place, Aberdeen.*
- 1863 Renshaw, Charles J., Esq., M.D., *Ashton-on-Mersey, Manchester.* (*)
- 1901 Ridgeway, W., Esq., Disney Professor of Archaeology, *Caius College, Cambridge.* (§)
- 1893 Rigg, Herbert, Esq., 13 *Queen's Gate Place, S.W.*; and *Walhurst Manor, Horsham.*
- 1850 Ripon, The Most Hon. the Marquis of, K.G., G.C.S.I., C.I.E., D.C.L., F.R.S., 9 *Chelsea Embankment, S.W.*; and *Studley Royal, Ripon.*
- 1889 Risley, H. H., Esq., C.I.E., M.A., *Bengal Secretariat, Calcutta.* (§¶)
- 1900 Rivers, W. H. R., Esq., M.D., *St. John's College, Cambridge.* (§¶)
- 1892 Robinson, Louis, Esq., M.D., 61 *Killieser Avenue, Streatham Hill, S.W.*
- 1901 Rose, H. A., Census Superintendent, *Simla, India.*

Year of
Election.

- 1882 Roth, Henry Ling, Esq., 32 *Prescott Street, Halifax.* (¶)
- 1882 Rothschild, Hon. Nathaniel C., *Tring Park, Tring, Herts.* (*)
- 1899 Rücker, Miss S. C., 4 *Vanbrugh Terrace, Blackheath, S.E.*
- 1871 Rudler, F. W., Esq., F.G.S., VICE-PRESIDENT, Corresponding Member of the
Anthropological Society of Paris, 25 *Mornington Crescent, N.W.* (¶§)
- 1863 Salting, W. S., Esq., F.R.G.S., 40 *Berkeley Square, W.* (*)
- 1864 Sanders, Alfred, Esq., F.L.S., F.Z.S., *The Hawthorns, Caterham Valley, Surrey.*
(*¶)
- 1886 Sarawak, H.H. the Ranee of, *Kuching, Borneo, via Singapore.*
- 1876 Sayce, Professor A. H., M.A., LL.D., *Queen's College, Oxford.* (*¶)
- 1899 Scanlan, William R., Esq., *Crickfield, Hayward's Heath.*
- 1900 Seligmann, Charles G., Esq., 23 *Vincent Square, S.W.*
- 1885 Seton-Karr, H. W., Esq., 31 *Lingfield Road, Wimbledon.* (¶)
- 1866 Shaw, Lieut.-Colonel F. G., *Heathburn Hall, Carrigaline, Co. Cork.* (*)
- 1901 Shelford, R., Esq., *Sarawak Museum, Kuching; Hill House, Guildford.*
- 1898 Shrubsall, Frank Charles, Esq., M.A., 34 *Lime Grove, Uxbridge Road.* (*¶§)
- 1901 Skeat, W. W., Esq., M.A., 2 *Salisbury Villas, Cambridge.*
- 1866 Skues, F. M., Esq., M.D., Brigade Surgeon-Major, 51 *Kingstead Road, Catford.*
(*)
- 1898 Small, James Willoughby, Esq., Principal Victoria College, *Jaffna, Ceylon.*
- 1865 Smith, Worthington G., Esq., F.L.S., 121 *High Street, Dunstable.* (¶)
- 1893 Somerville, Lieutenant Boyle T., R.N., *H.M.S. "Triton," Chatham.* (¶)
- 1867 Southby, Philip, Esq., F.Z.S., Barrister-at-Law, *Bampton, Faringdon.* (*)
- 1889 Southesk, The Right Hon. the Earl of, K.T., *Kinnaird Castle, Brechin, N.B.*
- 1886 Stanley, W. F., Esq., F.G.S., *Cumberlow, South Norwood, S.E.* (¶)
- 1873 Stanmore, The Right Hon. Lord, G.C.M.G., K.C.B., D.C.L., *Red House, Ascot.*
- 1880 Stephens, Henry Charles, Esq., M.P., F.L.S., F.G.S., F.C.S., *Avenue House,
Church End, Finchley, N.; and 4 Carlton Gardens, S.W.* (*)
- 1892 Stephenson, Miss Rose, *The Hermitage, Duppas Hill, Croydon.*
- 1881 Stopes, H., Esq., 11 *Queen Victoria Street, E.C.* (*¶)
- 1887 Straker, Joseph, Esq., *Dipton House, Riding Mill, Northumberland.*
- 1883 Streeter, E. W., Esq., F.R.G.S., F.Z.S., 2 *Park Crescent, W.* (*)
- 1865 Swinburne, Algernon Charles, Esq., *The Pines, Putney Hill, S.W.*
- 1899 Swynnerton, Fred., Esq., *Oakwood Place, Simla, India.*
- 1899 Tabor, Charles James, Esq., *White House, Knott's Green, Leyton, Essex.*
- 1892 Taylor, Frederick, Esq., 250 *West 76th Street, New York City, U.S.A.* (*)
- 1879 Temple, Lieut.-Colonel R. C., C.I.E., Chief Commissioner Andaman and
Nicobar Islands, *Government House, Port Blair, Andaman Island; c/o
H. S. King & Co.* (¶)
- 1881 Thane, George Dancer, Esq., Professor of Anatomy in University College,
London, *University College, Gower Street, W.C.* (*¶)

Year of
Election.

- 1884 Thomas, Oldfield, Esq., F.R.S., F.Z.S., 9 *St. Petersburg Place, Bayswater Hill, W.* (*¶)
- 1873 Thompson, J. Barclay, Esq., M.A., Lee's Reader in Anatomy, 39 *St. Margaret's Road, Oxford.* (*)
- 1890 Thomson, Arthur, Esq., M.A., M.B., Professor of Human Anatomy in the University of Oxford, *The Museum, Oxford.* (¶)
- 1882 Thurn, Everard F. im, Esq., 1 *East India Avenue, E.C.* (¶§)
- 1896 Tims, H. W. Marett, Esq., M.D., 19 *Lyndewood Road, Cambridge.*
- 1899 Tocher, James F., Esq., F.I.C., *Chapel Street, Peterhead, N.B.* (¶)
- 1895 Tolley, Richard Mentz, Esq., F.H.S., *c/o Darlaston Steel and Iron Works, South Staffordshire.*
- 1901 Travers, Major John A., *Field Place, Horsham, Surrey.*
- 1885 Tregear, Edward, Esq., Secretary, Department of Labour, *Tinakon Road, Wellington, New Zealand.* (¶)
- 1879 Trotter, Coutts, Esq., F.G.S., 10 *Randolf Crescent, Edinburgh.*
- 1891 Tsuboi, S., Esq., *Science College, Imperial Institute, Tokyo, Japan.* (*)
- 1889 Turner, Sir William, M.B., LL.D., D.C.L., F.R.S. Lond. and Edin., Professor of Anatomy in the University of Edinburgh, 6 *Eton Terrace, Edinburgh.* (¶)
- 1867 Tylor, Edward Burnett, Esq., D.C.L., LL.D., F.R.S., VICE-PRESIDENT, Professor of Anthropology, Keeper of the University Museum, Oxford, *The Museum House, Oxford.* (¶§)
- 1891 Tylor, Mrs. E. B., *The Museum House, Oxford.*
- 1891 Waddell, Lt.-Col. L. A., LL.D., 35 *Dartmouth Park Road, Highgate Road, N.W.* (*¶)
- 1901 Waddington, S., Esq., B.A., 47 *Connaught Street, Hyde Park, W.*
- 1863 Wake, C. S., Esq., Foreign Member of the Anthropological Institute of New York, 411 *East 45th Street, Chicago, Illinois, U.S.A.*
- 1874 Walhouse, M. J., Esq., 28 *Hamilton Terrace, St. John's Wood, N.W.* (¶)
- 1866 Wallace, A. R., Esq., D.C.L., F.R.S., F.L.S., F.R.G.S., F.Z.S., *Corfe View, Parkeston, Dorset.* (¶)
- 1891 Ward, Herbert, Esq., 53 *Chester Square, S.W.* (¶)
- 1897 Webster, John Aplin, Esq., 21 *Castle Street East, Oxford Street, W.*
- 1901 Webster, W. D., Esq., *Home Court, Palace Road, Streatham Hill.*
- 1895 Wells, Samuel, Esq., F.R.G.S., *Richmond, Yorks.*
- 1901 White, Franklin, Esq., *P.O. Box 669, Bulwago.*
- 1897 White, Rashleigh Holt, Esq., M.A. Oxon, *Warren Wood, Bexley Heath, Kent.*
- 1901 Williams, J. W., Esq., M.R.C.S., L.R.C.P. Lond., F.L.S., 128 *Mansfield Road, Gospel Oak, N.W.*
- 1869 Winwood, Rev. H. H., M.A., F.G.S., 11 *Cavendish Crescent, Bath.*
- 1901 Withers, A. Delisle, Esq., *Ewhurst, 21 Lichfield Road, Kew Gardens.*
- 1881 Wolfe, Miss E. S., *High Broom, Crowborough, Sussex.* (*)

SOCIETIES, ETC., EXCHANGING PUBLICATIONS

WITH THE

ANTHROPOLOGICAL INSTITUTE.

GREAT BRITAIN AND IRELAND.

Dublin... Royal Dublin Society.
 — Royal Irish Academy.
Edinburgh... Royal College of Physicians.
 — Royal Society of Edinburgh.
 — Society of Antiquaries of Scotland.
Glasgow... Philosophical Society.
London... British Medical Association.
 — Egypt Exploration Fund.
 — Folklore Society.
 — Geologists' Association.
 — Hellenic Society.
 — India Office, Whitehall.
 — Japan Society.
 — Journal of Mental Science.

London... Nature.
 — Palestine Exploration Fund.
 — Quatuor Coronati Lodge, No. 2076.
 — Royal Archæological Institute.
 — Royal Asiatic Society.
 — Royal Colonial Institute.
 — Royal Geographical Society.
 — Royal Society.
 — Royal Society of Literature.
 — Royal Statistical Society.
 — Royal United Service Institution.
 — Society of Antiquaries.
 — Society of Biblical Archæology.
Truro... Royal Institution of Cornwall.

EUROPE.

AUSTRO-HUNGARY.

Agram... Kroätische Archäologische Gesellschaft.
Budapest... Magyar Tudományos Akadémia.
 — Magyar Nemzeti Múzeum Néprajzi Osztálya.
Cracow... Akademia Umiejętności.
Vienna... Anthropologische Gesellschaft.
 — K. Akademie der Wissenschaften.
Sarajevo... Landesmuseum (Wissenschaftliche Mitteilungen aus Bosnien).

BELGIUM.

Brussels... Académie Royale des Sciences, etc. de Belgique.
 — Société d'Anthropologie de Bruxelles.
 — Société d'Archéologie de Bruxelles.

DENMARK.

Copenhagen... Société des Antiquaires du Nord.

FRANCE.

Lyons... Société d'Anthropologie de Lyon.

Paris... L'Anthropologie.
 — École d'Anthropologie.
 — Revue de l'Histoire des Religions.
 — Société d'Anthropologie.
 — Année Sociologique.

GERMANY.

Berlin... Berliner Gesellschaft für Anthropologie, Ethnologie, und Urgeschichte.
 — R. Museum für Völkerkunde.
 — Seminar für Orientalische Sprachen.
Halle-a-d-Saale... Kaiserliche Leopoldina Carolina Akademie der Deutschen Naturforscher.
 — Deutsche Morgenländische Gesellschaft.
Kiel... Anthropologischer Verein für Schleswig-Holstein.
Leipzig... Verein für Erdkunde.
Munich... Deutsche Gesellschaft für Anthropologie, Ethnologie, und Urgeschichte.
Stettin... Centralblatt für Anthropologie, etc.

Stuttgart... Zeitschrift für Morphologie und Anthropologie.

GREECE.

Athens... Archaïologikè Hetairía.

— British School of Archæology.

ITALY.

Florence... Società Italiana di Antropologia, Etnologia, e Psicologia Comparata.

Rome... Bullettino di Paletnologia Italiana.

— Società Romana di Antropologia.

Rome... Accademia dei Lincei.

Turin... Archivio di Psichiatria.

NETHERLANDS.

Amsterdam... Koninklijke Akademie van Wetenschappen.

Leiden... Internationales Archiv für Ethnographie.

The Hague... Koninklijk Instituut voor de Taal-, Land-, en Volkenkunde van Nederlandsch Indië.

RUSSIA.

Moscow... Imper. Obschestvo Lubitelei Iestestvoznania, Antropologii, i Etnografii.

St. Petersburg... Imper. Akademia Nauk.

SWEDEN.

Stockholm... Academy of Antiquities, National Museum.

— Nordiska Museet.

— Ymer.

PORTUGAL.

Lisbon... Portugal em Africa.

Porto... Portugalia.

AFRICA.

Cape Town... S. African Philosophical Society.

AMERICA.

CANADA.

Montreal... Royal Society of Canada.

Toronto... Canadian Institute.

UNITED STATES.

Cambridge, Mass.... Peabody Museum, Science.

Chicago... American Antiquarian.

— Field Columbian Museum.

New York... American Museum of Natural History.

Philadelphia... Free Museum of Science and Art (University of Philadelphia, Department of Archæology).

Washington... American Anthropologist.

— Bureau of Ethnology.

— Smithsonian Institution.

— United States Geological Survey.

— United States National Museum.

Worcester, Mass.... American Journal of Psychology.

ASIA.

CHINA.

Shanghai... Royal Asiatic Society (China branch).

INDIA.

Bombay... Anthropological Society.

— Indian Antiquary.

Calcutta... Bengal Asiatic Society.

Colombo... Royal Asiatic Society (Ceylon branch).

JAPAN.

Tokio... Asiatic Society of Japan.

— Tokio-Daigaku (Imperial University).

JAVA.

Batavia... Bataviaasche Genootschap van Kunsten en Wetenschappen.

STRAITS SETTLEMENTS.

Singapore... Royal Asiatic Society (Straits Branch).

AUSTRALIA AND PACIFIC.

Honolulu... Bernice Pauahi Bishop
Museum.

Melbourne... Royal Society of Victoria.

Sydney... Australian Museum.

Sydney... Australasian Association for
the Advancement of Science.

— Royal Society of New South Wales.

Wellington, N.Z.... Polynesian Society.

PUBLICATIONS RECEIVED IN EXCHANGE FOR "MAN."

ENGLAND.

London... Church Missionary Intelli-
gencer.

— Journal of the East India Association.

— Lancet.

— South American Missionary Maga-
zine.

AUSTRIA.

Prag... Český Lid.

BELGIUM.

Ghent... Volkskunde.

FRANCE.

Paris... Revue des Traditions Populaires.

— Melusine.

GERMANY.

Brunswick... Globus.

Dresden... Bericht des Vereins für
Erdkunde.

Munich... Korrespondenzblatt.

— Jahresbericht der Geographischen
Gesellschaft.

Nürnberg... Bericht der Natur-historis-
chen Gesellschaft.

PORTUGAL.

Lisbon... Archeologo Português.

Serpa... A Tradição.

SERVIA.

Alexinatz... Karadjitch.

SWITZERLAND.

Zürich... Schweizerisches Archiv für
Volkskunde.

UNITED STATES.

Boston... American Journal of Archæ-
ology.

Chicago... Open Court.

Meriden... Biblia.

New York... Appleton's Popular Science
Monthly.

Philadelphia... Proceedings of American
Philosophical Society.

NEW SOUTH WALES.

Sydney... Science of Man.

LONDON:
HARRISON AND SONS, PRINTERS IN ORDINARY TO HER LATE MAJESTY,
ST. MARTIN'S LANE.

JOURNAL
OF THE
ANTHROPOLOGICAL INSTITUTE
OF GREAT BRITAIN AND IRELAND.

ANNUAL GENERAL MEETING.

JANUARY 30TH, 1900.

C. H. READ, Esq., F.S.A., *President, in the Chair.*

The Minutes of the last Anniversary Meeting were read and signed.

The CHAIRMAN declared the ballot open, and appointed, as Scrutineers, Mr. H. Stopes and Rev. H. N. Hutchinson.

The TREASURER read his Report for the year 1899 which was adopted.

The Report of the Council for 1899 was also read and adopted.

The Election of Miss A. C. BRETON as a Fellow of the Institute was announced.

The PRESIDENT delivered his Anniversary Address.

It was moved by Dr. GARSON, seconded by the TREASURER, and unanimously resolved:—

“That the thanks of the Meeting be given to the President for his Address, and that it be printed in the *Journal* of the Institute.”

The SCRUTINEERS gave in their Report, and the following gentlemen were declared to be duly elected, to serve as Officers and Council for the year 1900.

President.—C. H. Read, Esq., F.S.A.

Vice-Presidents.

A. J. Evans, Esq., M.A., F.S.A. | Wm. Gowland, Esq., F.S.A.

A. P. Maudslay, Esq.

Secretary.—J. L. Myres, Esq., M.A., F.S.A., F.R.G.S.

Treasurer.—A. L. Lewis, Esq., F.C.S.

Council.

G. M. Atkinson, Esq.	Prof. G. B. Howes, LL.D., F.R.S.
H. Balfour, Esq., M.A.	Baron A. von Hügel, M.A.
Wm. Crooke, Esq., B.A.	A. Keith, Esq., M.D.
O. M. Dalton, Esq., M.A., F.S.A.	Sir Hugh Low, G.C.M.G.
R. W. Felkin, Esq., M.D., F.R.G.S.	J. Edge-Partington, Esq.
H. O. Forbes, Esq., LL.D.	Sir C. E. Peek, Bart., M.A., F.S.A.
Prof. A. C. Haddon, M.A., Sc.D., F.R.S.	R. H. Page, Esq.
E. Sidney Hartland, Esq., F.S.A.	E. G. Ravenstein, Esq., F.R.G.S.
Col. Sir T. H. Holdich, K.C.I.E., C.B.	F. C. Shrubsall, Esq., M.A.
T. V. Holmes, Esq., F.G.S.	Prof. A. Thomson, M.A., M.B.

Assistant Secretary.—J. A. Webster, Esq.

A vote of thanks to the Officers and Councillors, as well as to the Auditors and Scrutineers, was moved, seconded, and carried by acclamation.

TREASURER'S REPORT FOR 1899.

The income of the Institute for the year 1899 was £524 8s. 1*d.*, being £60 less than the income for 1898. This difference is fully accounted for by the facts that in 1898 we received three life compositions, amounting to £63, and that in 1899 we did not receive any. There is also a large diminution in the amount received for subscriptions in arrear, but that is because most of what was to be obtained from that source was got in in 1898. This latter diminution is counter-balanced by an increase in the amount received from sales of publications, an increase which however is not caused by popular appreciation of the improvements in our *Journal*, but by the publication of double numbers bringing five quarters into our publishers' account for the year as against three quarters in the preceding year.

The expenditure during the year 1899 was £590 3s. 11*d.*, which, though £32 5s. 9*d.* less than in 1898, is £65 15s. 10*d.* more than the income for the year. The *Journal* has cost us about £50 less than in 1898, partly I think in consequence of the cheaper but not less efficient processes of producing illustrations which are now practicable, but there have been slight increases in our general expenses, due in some measure to our having held three more meetings in the session 1898–9 than in that for 1897–8. The desire of the Council is to give our members as much as possible for their subscriptions in the shape of meetings and publications, but our printers have already picked the last bone of our Tasmanian skeleton, and are now swallowing up our Tasmanian busts, and I hope therefore that our members will do all they can before the end of the century to provide them with fresh and more appetising sources of supply.

ANTHROPOLOGICAL INSTITUTE OF GREAT BRITAIN AND IRELAND.

Receipts and Payments for the Year 1899.

RECEIPTS.

BALANCES, 1st January, 1899 :	
Cash at Bank.....	215 18 6
Less reserved for proportion of double number of Journal	65 0 0
Petty Cash.....	150 18 6
	4 1 7
Less balance of <i>Notes and Queries</i> account	155 0 1
	42 18 10
SUBSCRIPTIONS :	
For the year 1899.....	353 17 0
Arrears	6 8 0
For 1900 in advance.....	14 14 0
SALE OF PUBLICATIONS :	
Messrs. Kegan Paul & Co. (July 1, 1898, to June 30, 1899)	100 19 5
Office Sales.....	26 12 2
DIVIDENDS for one year on Metropolitan Consolidated 3½ per cent. Stock (less Income Tax)	127 11 7
INCOME TAX recovered (less cost of recovery)	20 6 0
" ANTHROPOLOGICAL NOTES AND QUERIES " :	1 11 6
Balances as per last account	42 18 10
Sales during 1899	3 6
British Association on account of new edition	40 0 0
Less paid British Association, balance of old account	83 2 4
	42 15 4
	40 7 0
	<hr/>
	£676 16 4

Examined and found correct,

16th January, 1900.

RENT (including Coal and Gas) for one year to Michaelmas, 1899	
PRINTING JOURNAL, Nos. 1 to 4, New Series, including illustrations and Authors' copies	239 6 3
Less received from N. Brown, Esq., in respect of Mr. Leith's plate of South Africa imple-ments	2 2 0
	<hr/>
SALARIES AND COLLECTOR'S COMMISSION	237 4 3
HOUSE EXPENSES :	96 8 7
Attendance and Refreshments at Meetings	26 5 0
Cleaning rooms, etc.	17 16 6
	<hr/>
STAMPS AND PARCELS	44 1 6
PRINTING AND STATIONERY	35 16 1
LANTERN (materials and hire)	22 6 5
REPAIRS, ETC.	9 8 3
INSURANCE AND SUNDRIES	2 15 8
BOOKBINDING	2 18 2
	4 5 0
	<hr/>
	590 3 11

BALANCES, 31st December, 1899 :

Cash at Bank	144 12 0
Less reserved for proportion of double number of Journal (as per contra)	65 0 0
	<hr/>
Petty Cash	79 12 0
	7 0 5
	<hr/>
	86 12 5

(Signed) M. J. WALHOUSE, }
ROBERT B. HOLT, } *Auditors.*

£676 16 4

The liabilities at the end of 1899 (other than our moral liability to life members) were:—

	£	s.	d.
Rent, etc., for one quarter	33	15	0
Double number of <i>Journal</i> , illustrations, miscellaneous printing, and sundries estimated at	145	18	0
<i>Anthropological Notes and Queries</i> ...	40	7	0
	<hr/>		
	£220	0	0
	<hr/>		

The assets at the same date were:—£600 Metropolitan $3\frac{1}{2}$ per cent. Consolidated Stock (worth about £672), cash in hand and at the Bankers, £151 12s. 5d., some unpaid subscriptions, and the library, furniture, and stock of publications.

A. L. LEWIS, *Treasurer*.

REPORT OF THE COUNCIL OF THE ANTHROPOLOGICAL INSTITUTE OF GREAT BRITAIN AND IRELAND FOR THE YEAR 1899.

During the year under report, eleven Ordinary Meetings were held, and one Special Meeting in conjunction with the Folklore Society. At the latter a collection of anthropological and folklore objects collected in Mexico and presented to the Folklore Society, which are for the present deposited at the University Museum, Cambridge, were exhibited and described by the donor, Professor F. Starr, of Chicago.

It has been the object of the Council during the year to make the Evening Meetings more instructive and popular. Numerous collections of specimens have been exhibited, and the papers have been, as far as possible, illustrated by lime-light views. The Council are indebted to Dr. J. G. Garson for his assistance in working the lantern. This has led to improved attendance of Fellows and visitors, and the Council hope that this improvement will be maintained during the coming year.

Four parts of the new series of the *Journal* have been issued during the year, two in May and two in November. The Council have received many expressions of approval regarding the new *Journal*, which, in importance of communications, number of illustrations and general artistic appearance, is a great improvement on the previous issue.

The Council also call special attention to the issue of the revised edition of *Anthropological Notes and Queries*, prepared by the President Mr. C. H. Read and Dr. J. G. Garson. The book in its new form promises to be of special value for the direction of inquiries by explorers in various parts of the world.

On the whole, the numbers of Fellows have been well maintained. The membership of the Institute in the previous year consisted of 49 Honorary,

26 Corresponding, 83 Compounding and 215 Ordinary Fellows. We have lost 1 Honorary and 2 Corresponding Fellows. The loss of 8 Ordinary Fellows has been more than balanced by 22 new Elections. There has thus been a net increase of 13 in the number of our Fellows.

Among the losses which the Council regret to announce are, among the Honorary Members, those of Dr. J. Brinton, the eminent American anthropologist; of Corresponding Members, Professor Rygh, of Christiania, and Dr. Ludwig, of Darmstadt; of Ordinary Members, Sir W. H. Flower and Mr. Bernard Quaritch.

The Council again appeals to its Fellows to impress upon all British travellers and explorers the urgent need of increased numbers of working Fellows if the Institute is to carry on with success those studies so essential to the progress and welfare of our Colonial Empire.

The Library Committee reports that the Library grows steadily both by exchanges and by frequent donations by authors and publishers of books intended for review in the *Journal*. During the current year, 76 volumes have been presented, and 32 British, 11 Colonial and Indian, and 50 Foreign periodicals have been acquired by exchange; making a total number of 169 volumes or parts. With the small grant at their disposal for binding (only £5) the Committee has been able not only to keep abreast of current acquisitions in the series which are already partly bound, but also to do something to diminish the great mass of arrears. A beginning has also been made in cataloguing the unbound pamphlets, many of which have hitherto been practically inaccessible, and a large part of the library has been overhauled with the object of providing space for the rapid growth of some of the principal periodicals. The Committee feel that it is time that the Institute should know that before long the existing shelf room will be exhausted; and that within a very few years it will be necessary to consider the question either of a thorough-going revision of the Library with a view to reducing the bulk of what stands on the shelves or of considerable outlay in fresh accommodation for this valuable part of the Institute's property.

During the past year also the collection of photographs, prints, and drawings has been arranged and catalogued by Mr. Myres, and an inventory and subject index are now ready for use in the Library. It is hoped that the Fellows of the Institute will make frequent use of the anthropological illustrations which are thus made accessible, and will contribute copies of any suitable photographs which they may possess, so as to make the collection worthy of the Institute.

PRESIDENTIAL ADDRESS DELIVERED AT THE ANNIVERSARY
MEETING OF THE ANTHROPOLOGICAL INSTITUTE OF GREAT
BRITAIN AND IRELAND. 30TH JANUARY, 1900.

BY C. H. READ, F.S.A.

THE first duty of the President of the Institute at the Annual Meeting is to give so much of a review of the work of the past year as may at any rate help to indicate what amount of progress our subject has made, more particularly as seen in the proceedings and publications of the Institute itself. So far as anthropology in general is concerned, I think that in this country we are approaching a period of considerable activity, and that the seed sown thirty years ago by the great men whose names appear on our records, has now sprung up and will speedily bear good fruit. The persistent advocacy of our doctrines by men like Huxley, General Pitt Rivers, Sir William Flower, Mr. Francis Galton, and Professor Tylor, whose names are familiar to all the world, cannot fail in due course to leave a decided impress on the progress of the subject. The establishment of the Chair of Anthropology and the foundation of the Pitt Rivers Museum at Oxford also will have in the future a more marked influence on the course of scientific study than we have seen even now. It is but yesterday, so to speak, that we were admitted among the sciences, and being thus the youngest of a large family, we must not expect that amount of deference and recognition that is accorded to our elder brothers, though in our hearts we know that Benjamin's portion should be ours. But in order to secure this, it is needful that we do not in any degree relax the efforts that have hitherto been a necessity, and we must be prepared to welcome and publish in an adequate manner the results of the work done by the rising generation of anthropologists who have devoted a part of their time at the University or elsewhere to this branch of science. To do this in a worthy manner a large membership is absolutely necessary, and in urging you to use your endeavours to enlarge the influence of the Institute in this way, I only repeat what I have heard on many occasions from this chair.

I do not see, however, that we have any special cause for despondency at this moment. The Treasurer's report shows, I think, that we have not spent more than we can afford, and with the small income at our disposal it is not possible, even for Mr. Lewis, to make a very brilliant financial statement. The losses by death and resignation also have been more than filled by the election of new members. The only other matter in this category that I need refer to is the number and quality of the communications that have been brought before us, and so far as a part of these is concerned, if not all, you can judge as well as I, for several of them appear in the last number of the *Journal*.

Prehistoric archæology is represented during the year by one paper only, and "colithic" man has been allowed an interval of repose. Our single contribution is from Mr. George Clinch, and describes a number of dwelling-places of the neolithic age that he had explored for some years past on the borders of Kent and Surrey. Such remains are very subject to destruction from the ordinary operations of agriculture, and it is fortunate when so interesting a group as that described by Mr. Clinch finds a chronicler before it is too late. In British ethnology Dr. Beddoe contributed an interesting note on the mediæval population of Bristol, in which he would account for certain cranial characters by an admixture of French blood, for which there is historical support. He admits that the method he adopts to distinguish English from French by surnames is a rough one; but there is one factor which would imply a liberal discount. It is that in Norman times a great proportion of the well-to-do population would almost certainly possess French titles referring to their calling, such as Dr. Beddoe quotes, Boulenger, Clerk or Leclerc, Bailey and so forth. But I think it would be going too far to assume that every person bearing such a gallicized title was of French blood. Fashion in such matters counts for much, while human nature changes but little in essentials, and I think it would be safer to take for granted that if Mr. Baker found it would improve his business to be called Boulanger or Bullinger, he would make the change, and be in the fashion.

The ethnology of Africa, as might be expected, has occupied a good deal of attention, and we have had no less than six papers relating to various parts of Africa. Two of them dealt with the inner life and superstitions of the West African negro, Mr. Marriott's paper on "Secret Societies," and that of the Count de Cardi on the "Ju-Ju laws of the Niger Delta." The former paper was admittedly in the main a compilation, aided by a short residence in the country; but as I ventured to point out at the time, it is none the less a valuable record of knowledge on that account. Many of us have had good reason to be grateful to the laborious searcher who has gathered into the modest compass of a single paper all the valuable facts on our special subject from the little used pages of hundreds of bulky volumes. Whether or no Mr. Marriott is right in thinking that the English governor should try to direct the secret societies of West Africa into decent and useful channels is beyond my power to answer. But as the native's slightest act is governed by the laws of these societies, it is clear that they are a force that any government will have to reckon with, and if Mr. Marriott has helped ever so little in this direction he will have done a useful work.

Colonel Macdonald's paper, or as he modestly called it, notes, on the ethnology of the tribes met with on the Juba Expedition will be found of great importance and interest by anyone studying the very complex relations of the inhabitants of this portion of Africa. We have to regret that Colonel Macdonald was unable to be present to read it himself. The name of Dr. Westermarck is of itself a sufficient guarantee that his views on the nature of the Arab *Ġinn* would be worth hearing, and it is a matter for congratulation that one of the first-fruits of his

study of the ethnology of Morocco has been brought before us. The notes of Dr. Kingston on the remains of human industry found in the Knysna caves in South Africa seemed to me to be of special interest, though the writer made no pretensions to giving an exhaustive review of his subject. From his statements it appeared to be quite certain that the very rude stone implements found in these caves were the productions of previous generations of existing natives. Had they been found under other conditions there would have been great temptations to make rudeness of form and a remote antiquity go together. I have a strong impression that it will be found that the stone implement question in Africa generally will have to be studied on its merits and independently of the familiar classification of more northern lands, and I shall not be surprised if it should turn out that the mass of so-called palæolithic types found in various parts of the African continent are in reality of comparatively recent origin.

I must not forget a tribute of praise to Dr. Bennett for his admirable, though all too short, account of the cannibal Fang of Western Africa, a type of what such field work should be. This interesting tribe of people, one of whose peculiarities is that they use the crossbow, have been much written about before in a picturesque fashion, but it remained for Dr. Bennett to give us the plain unvarnished tale of their daily life, told as only he can tell it who has become their trusted friend.

Colonel Sir Thomas Holdich gave us two very graphic papers on the "Tribes on the North-West Frontier of India," whose good or ill humour makes so much difference to the comfort of our government there. It is pleasant to think that there seems to be no prospect of trouble in that quarter at the present moment, thanks to the men of the stamp of Sir Thomas Holdich. From our Secretary, Mr. Crooke, we had an excellent *resumé* of the survivals of primitive methods of disposing of the dead in India, a subject on which he is well qualified to speak. It is one of the most important in the study of racial affinities, for it is one of the customs which all folk whether primitive or civilized change with the greatest reluctance. Another Indian authority, Colonel Temple, has given us a most interesting monograph on the "Origins of Currency," a very intricate and difficult subject, but which by lucidity of style and clearness of demonstration Colonel Temple was able to render instructive and easy of understanding.

One of our meetings was held in common with the members of the Folklore Society, a sign of amicable relations which I trust will always be maintained. The special occasion of this was to do honour to Professor Starr, of the University of Chicago, a city in which anthropology seems to hold an ideal position. Professor Starr had made, during sundry visits to Mexico, a collection of objects illustrating Folklore; these he had sent over to England as a gift to the Folklore Society, who in turn have deposited them in the museum at Cambridge. Those members of the Institute who were fortunate enough to be present when Professor Starr gave an account of the collection will, I am sure, agree with me that an evening could scarcely be passed in a more interesting and entertaining fashion.

It is exactly a quarter of a century ago since I had the honour to be elected a member of this Institute, and I recently had the curiosity to read again the excellent address delivered by Dr. Busk, at that time the retiring President, and I found in it some few facts to cheer us, though at the same time the progress of the Institute has not been so marked in all directions as we might fairly have hoped. Dr. Busk was compelled to allude to the state of civil war that at that time divided English anthropologists into two or perhaps more camps. This state of things has fortunately for us passed into the domain of history, and the discussions at our meetings rarely travel beyond the subjects of the papers, to which the members are now able to devote all their energies. The Institute had at that moment just emerged from a period of great financial difficulty, by the liberality of a number of the members, a considerable proportion of whom are happily still among us, and one subject of regret to the President was the inability of the Institute to publish adequately the papers that were presented, such publication being obviously one of its main functions. In this respect we can at the present time claim to have made a distinct advance. The *Journal* in its new form, which has been on its trial since August, 1898, is, I think, a creditable publication, of which we have no need to be ashamed, and the manifest advantages of the larger size in the quality and appearance both of text and plates are justification enough for the change. At the same time we are able to publish all the papers brought before us that are considered worthy of a place in the *Journal*. I can, however, quote one of Dr. Busk's remarks as entirely applicable to our present situation. He said in 1875 that "to enable the Institute to take the position it ought and deserves to occupy, a far more ample revenue than we at present enjoy is indispensably necessary." No truer description of our present condition could be given than this, and it is not pleasant to think that in spite of the firm position that our branch of science now enjoys we should have no better report than this on the condition of the exchequer. It does not seem likely that anthropology will be among the most popular studies of the ordinary Englishman, though many of its branches can claim results that have a very practical bearing on the well-being both of the individual and the community. Popularity, however, is not always a benefit to a serious study, and if it be not too paradoxical I should like to say that while it would be doing good work to popularize anthropology, I doubt whether it would benefit anthropology to be popular, as a science. It would be a far greater service to popularize its results, and in this respect I think the Institute could do good work even with its present limited resources. During the past year I have thought of expedients in this direction, and others have been suggested to me. One of these seems likely to come about in the near future, and this is the delivery of lectures by well known authorities in the various branches of our subject, in memory of one of our most distinguished Presidents, Professor Huxley. Such returns will be independent of and in addition to the ordinary business of the session, and will be of a character to be readily followed and understood without any special acquaintance with the mysteries of anthropological

science. That such lectures can and should be popular is shown by the attendance at the analogous lectures at the Royal Institution and elsewhere, and I can well conceive that to a vast number of people it will come as a surprise that more use has not been made of curious and interesting facts that are now labelled with the uninviting title, Anthropology. It is in this form that I trust popularity will come to us, and not as an interference with our more specialized communications, which must always remain the foundation of our knowledge, and the main reason for our existence. It is clearly out of the question, at the same time, that we can successfully court popularity by their means, and, as I said before, I scarcely think it desirable to try. Many of my audience to-night must have felt more than once the pain that comes to all of us, when a lecturer is sensible that his hearers, sympathetic though they may be, cannot follow his arguments, or are manifestly unfamiliar with the terms or names that he uses, and which the time limit forbids him to explain or amplify. To make such an occurrence impossible in any society is worth an effort, and I believe the institution of the Huxley lectures will do much towards this end here. At the same time, although the scheme indicates that there will be two kinds of audiences, as there will be two kinds of lectures, it must not for a moment be thought that the members of the Institute will be excluded from any of the discussions, or that any of their privileges will be curtailed. On the other hand, these will be considerably increased, and, we trust, to the advantage of everyone concerned.

While I am dealing with this branch of my subject, I wish to remind members of the Institute that they have it in their power to add considerably to the interest of the evening meetings by making small contributions either in the way of exhibiting specimens, and providing a short note, or by sending to the Secretary notes either of recent discoveries or of other matters within our scope. Such unpretending communications not only render the proceedings more interesting, but they might frequently serve the purpose of keeping us more up to date, and add to the permanent value of our *Journal*. Almost every member, moreover, can help in this way, and swell the bulk of useful "Miscellanea."

Library.—We have heard in the Council's report that several valuable additions have been lately made to the Library, and this opens up a prospect which will need the earnest consideration of the Council and officers before very long. Our library, although it can scarcely claim anything like completeness, has yet attained proportions which very nearly equal the shelf-room at present available, and this without counting a quantity of pamphlets which will in due course be bound and placed on the shelves. In our present rooms there is practically no means of extending the library accommodation to any useful extent; on the other hand, the increase of the library is continuous and fairly regular, our exchanges alone requiring a certain number of additional feet of shelving per annum. Thus it is only a matter of the simplest arithmetic to estimate the earliest moment at which we shall reach the end of our tether, and then the very serious question will arise whether it is possible for us to obtain

more room in our present quarters, which will of course involve a corresponding increase in rent; secondly, supposing such an extension of room to be obtainable here, whether we should avail ourselves of it, and bear the additional burden of rent; or thirdly, whether we should try to obtain roomier quarters within our means elsewhere. These are weighty questions, involving a great many incidental difficulties, and the Council will not have an easy task in finding a satisfactory solution. I do not propose even to suggest at this moment which of the alternatives is to be preferred, but I feel it my duty to point out clearly what is before us, and I trust that we shall be able to avoid the painful course that has been followed by one Society in the same conjuncture, that is, to sell the library by auction, a course which for us would, I think, have fatal consequences.

The Council have reported to you the issue of the new edition of the *Notes and Queries on Anthropology* under the editorship of Dr. Garson and myself. As before, the British Association has granted the funds necessary, and to its Council our warm thanks are due for helping us in so practical a way—for it must not be forgotten that we owe many useful papers to the publication of that little book, and it will not be denied that our recent *Journals* have been the richer by its means. While the form and general aspect of the book remains much the same as before, yet Dr. Garson has found it necessary to make very drastic alterations in the physical section, which he had in charge, and I can well believe that during the interval of seven years that has passed since the previous issue, marked advance has been made in the methods of that branch of anthropology, and that the instructions required considerable revision. I do not know that any apology is required from me for leaving my part of the work, dealing with ethnography, without any such severe alteration; but, at the same time, I think it well to point out that while observations in the physical section can only be usefully made by a properly qualified physician or surgeon, the queries on the ethnographical side are purposely so framed as to enable any intelligent and observant person on the spot to deal with them. This difference is an essential one and will serve to explain why the second part of the book is less subject to modification than the first. I am fully aware that there is room for a manual treating ethnography from a severely scientific standpoint, and that this will come in time I do not doubt, but at present I fear it would have a very limited circulation.

While on the subject of the collection of anthropological material, I will take the opportunity of saying a few words on the project of a Bureau of Ethnology, which has been more than once mentioned in this room, and for which I for one venture to anticipate a successful future, in spite of official apathy.

It will be remembered that as long ago as the Liverpool meeting of the British Association I ventured to bring forward a motion on the subject, urging the prompt establishment of a bureau for the collection of anthropological data under the auspices of a Government Department. I laid considerable stress on the utility that such a bureau would have, not only for men of science, but for the Government itself, which would possess, after the lapse of a few years, a great

quantity of valuable information regarding the hundreds of primitive races with whom we either have constant daily relations or with whom we occasionally come into contact. I adduced also the valuable argument that all this work would be done, the results arranged and classified for reference, and at the disposal of the officers of the Government, almost without cost to the State. For it is an essential part of the scheme that the field work of the bureau is to be entirely carried on by the trained men already in Government employ in our distant possessions, and I have good reasons for believing that many such men, naval officers, the trained officials of the Intelligence Branch of the War Office, Commissioners and Administrators in our Colonies and Protectorates, would cheerfully and willingly employ their leisure in this work. Such is a brief outline of the scheme, and I hope you will pardon my repeating it now in case some members of the Institute may not be already acquainted with it. The Council of the British Association received the resolution favourably, a Committee was appointed to consider it, and this Committee recommended that the Trustees of the British Museum should be invited to undertake the working of the bureau. This body was accordingly approached, and I was then informed that if the scheme were to be worked at the British Museum, the bureau of ethnology would be attached to my department. This had by no means been a part of my original programme, but I was clearly bound to accept the additional responsibility. Communications were then opened with the Foreign Office, in order to obtain the sympathetic co-operation of its officers, and I had an interview with Sir Thomas Sanderson, who was favourably impressed with the usefulness of the proposed work, and was good enough to address letters to the chiefs of the Protectorates in East Africa, instructing them to carry out the wishes of the Trustees of the British Museum, so far as it did not interfere with their ordinary duties. This seemed very promising, and in order to begin the work I applied for a clerk to help in the correspondence that I foresaw would soon become a serious item.

After overcoming the objections of the Treasury, who maintained that such work as was contemplated did not appear to be within the scope of the British Museum, the request was finally granted, and a clerk will in due course be appointed, but with a condition. The condition is this: that if the work of the Bureau of Ethnology increases to any considerable extent, it must then be transferred elsewhere.

However this may be, I have thought that the present is a good opportunity to state the course that affairs have followed, for the information of the Institute. It seems that the best policy now is to create so good and useful a department that even the Treasury will see that it could not well be dispensed with, and to this end I will devote my best efforts, and if, as I confidently hope, the bureau be successful, we must then be prepared with a plan for its more extended working, and a habitat in which the work can be carried on.

There is another project that I ventured to put forward in my address at the last meeting of the British Association, viz., the future position of the important

ethnographical collections under my charge at the British Museum. In this matter I had hopes that the few months that had elapsed would have seen some progress; but our national circumstances have been entirely unfavourable, and at the present moment I think it would be both unadvisable and useless to try to educate public opinion with regard to a scheme of this kind. Our counsels and ideas would fall on ears necessarily and rightly pre-occupied with the vital issues now being decided in South Africa, issues the importance of which we recognise to the full, and I am sure that we shall best consult the dignity of our studies by waiting patiently until a successful conclusion has been reached in South Africa, when we can with propriety and more probable success press our views on the Government for the establishment of a properly appointed museum of anthropology. I have ventured to identify the Institute with this scheme, for I know that I have the sympathy and support of the Council, and I am convinced that the foundation of such a museum would form a potent factor in the success of the Institute. I am equally sure that until the national collections of ethnography are in such a position as to admit of their being worked on methods more adapted to the requirements of the subject than is at present possible, we shall never take the scientific position to which our empire is entitled. In this belief, curiously enough, I am supported by more than one of our foreign competitors, who, while they are naturally anxious to increase the treasures of their own museums, at the same time are catholic enough in their views to realize that if England neglects her vast opportunities, while it may be in part their gain, yet it cannot fail to entail ultimate loss in the amount of material available for study.

While we may lament the apathy of the State in anthropological science, there is considerable satisfaction to be derived from the activity seen in centres where the impetus is derived from other sources. At Cambridge great efforts are being made to bring anthropology to the front, by means of expeditions and publication.

The Cambridge Anthropological Expedition to Torres Straits and Sarawak, under the leadership of Dr. A. C. Haddon, returned at the end of May, after a successful mission. The main object of the Expedition was to study the Torres Straits Islanders as completely as possible, and a good deal of work was accomplished in the departments of physical anthropology, psychophysics, linguistics, and general ethnography. Observations have been recorded and collections made which will furnish materials for a monograph on the Islanders, which in due course will be published by the Cambridge University Press. Some of the members of the Expedition visited various portions of the coast of British New Guinea for the purpose of comparing the Torres Straits Islanders with the Papuans and Melanesians of the mainland, and some valuable work was accomplished. Most of the members of the Expedition accepted a very hospitable invitation from Mr. Charles Hose, the President of the Baram District of Sarawak. Here a large number of anthropometric data were obtained, and a good insight into the character and mode of life of various interior tribes of Sarawak was gained. Dr. Haddon has also laid the foundation for a study of the decorative art

of Sarawak and Mr. Ray studied the languages ; but it is unnecessary to detail the work done by the several members of the Expedition as the results will eventually be published. Mr. Hose deserves the gratitude of anthropologists, not only for his hospitality to this Expedition, and for placing his unequalled knowledge of and influence with the natives at the disposal of his guests, but for his generosity in giving fine collections illustrating the ethnography of his district to the British Museum, and especially to the University of Cambridge. Mr. Hose is now in England on furlough, and we hope to have the pleasure of learning from him something about the natives whom he governs so wisely.

Mr. W. Skeat, also a Cambridge man, has turned to account his local knowledge of the Malay Peninsula, and has organised an expedition composed of graduates from Oxford and Cambridge to study the fauna, flora, and anthropology of the Malay Peninsula. Very few particulars are yet to hand, but I gather that the expedition has met with considerable success, and a number of ethnographical specimens have already arrived in Cambridge, which will supplement the very fine collection that Mr. Skeat gave to the University three years ago. Unfortunately, Mr. Skeat is at present invalided by beriberi.

A lectureship on Physical Anthropology, in connection with the Human Anatomy Tripos, has been instituted by the University of Cambridge for the teaching of anthropology from the human anatomy standpoint. It is satisfactory to find that the courses of lectures and the practical instruction which were gratuitously carried on by Dr. Haddon for several years have been put on a permanent basis. Professor Macalister is to be congratulated on having thus strengthened his school. Our Fellow, Dr. W. L. H. Duckworth, who has read several papers before the Institute, has been appointed to the lectureship.

From Oxford there is little to record except a steady increase in the ethnological and archæological collections, and for the future the most hopeful sign is that it is becoming possible to secure a small audience of University men and others for lectures on passages in classical literature which admit of anthropological commentary, and on the earlier stages of civilisation in the eastern Mediterranean. The establishment under a joint committee of the Royal Geographical Society and the University of a School of Geography in Oxford, designed to provide a complete geographical training for all duly qualified students, whether members of the University or not, deserves notice, though not directly anthropological in intention, both because historical geography and anthropogeography have from the first received ample recognition in its programme of work, and because the constitution of the School of Geography itself probably indicates the way in which similar studies may be, with the smallest dislocation of the ancient ways, encouraged in the University.

In the Pitt Rivers Museum Mr. Balfour announces that his accessions have been more numerous than usual, among them the greater part of the Australasian collections of our deceased Fellow, Mr. H. A. Tufnell ; and further that he can make a satisfactory report on the use that has been made of the museum collec-

tions by students. Mr. Balfour's long illness, however, must have had an effect on the usefulness of the collections, which owe so much to his energy and skill.

In the Ashmolean Museum, which through the munificence of the late Dr. Fortnum has received large accessions this year, the principal acquisitions of anthropological interest are a small but very valuable series of Chinese and Japanese bronzes in the Fortnum collection; a further instalment of typical specimens from M. Siret's excavations in Spain, which illustrate, for comparison with other Mediterranean series, a number of features in early Iberian civilisation; and a rich series of tomb-groups of the later "Libyan pan-grave" type, from Professor Petrie's excavations of 1899. These last, together with objects from Hierakonpolis and other Egyptian sites, have been presented by the Egypt Exploration Fund, and reinforce the existing collection on a side on which the museum is already becoming peculiarly strong. The museum has also received by deposit the collection of vases and other Greek antiquities formed by Mr. Edmund Oldfield, which includes several choice and unusual representations of familiar Greek myths, particularly of the making of Pandora, of Oedipus and the Sphinx, and of the attack of Heracles upon Busiris; the last-named being the well known vase with representations of negroid types by a Greek artist. It was published long ago by Dr. Helbig in *Annali del' Istituto*, 1865.

Among the contributions to the practical anthropology of the year must be counted the memoir read at the Dover Meeting of the British Association by Mr. Henry, of the Indian Police, on his working of the finger print system for the identification of criminals. Mr. Henry gave a minute account of his experience in the system of measurements for identification invented by Monsieur Bertillon, and finding it unsatisfactory he fell back on the finger prints method of our former president, Mr. Francis Galton. The Bertillon system, according to Mr. Henry, suffers from the radical defect that no two individuals are likely to produce exactly the same results from any given subject, while there is, in addition, an inherent liability to error or variation in the instruments themselves. Thus the formulation of the results from a number of subjects cannot be classified with any approach to the same certainty that Mr. Henry claims for the finger prints. In these he has devised a very ingenious mode of classification by means of which any person, after half an hour's explanation and practice, can unfailingly run to earth any given finger print among a series of many thousands, and when so found its position can be defined by a very simple formula. It is scarcely necessary to say that the police in India have to deal with a thousand individuals where the English police deal with ten or twenty, and Mr. Henry has claimed for his system that it is practical in its working, and that its results are certain, for one cogent reason among others, that the personal equation and the error in instruments are both entirely eliminated. He desires that the most exacting tests should be applied, and with that object he has asked to be allowed to give a demonstration of the system at the Institute during the spring, when we must see that he has the opportunity of doing so before as many experts as we can

get together. He thinks also that his case is strengthened by the fact that the criminal law in India has been so far changed as to admit finger prints as substantive evidence.

In India the application of finger prints is not confined to identification in criminal matters only. In all dealings with the native population, Mr. Henry informs me, the finger print is gradually taking the place of the ordinary form of identification, and it is found that the impression of the finger upon a receipt for a payment is a more effectual bar against attempts at extortion than any signature would be. It is easy to see how, in any community, it might be put to every-day practical use, and during the life-time of a testator would afford evidence of far greater value than a signature alone can furnish.

Another valuable memoir to which I think the attention of the members of the Institute may usefully be called is that by our Fellow, Mr. W. Gowland, on the "Early Metallurgy of Copper, Tin, and Iron in Europe," published by the Society of Antiquaries, in the *Archæologia*. Much has been written on this subject, so fruitful in difficulties, but this is the first time that it has been undertaken by one so well equipped by previous training as Mr. Gowland, whose career in Japan was a happy combination of metallurgy with archæology. One point of great interest that in his judgment is still undecided, is whether iron or bronze was first used by man, though it is probable that many archæologists have made up their minds on the subject; but he dispels altogether the idea that there is any greater difficulty, by the most primitive process, in producing an implement of iron than in making one of copper or bronze, and endorses Dr. Percy's opinion that, metallurgically, the Age of Iron should precede the Bronze Age. I venture to cite this one point among many of great interest in the paper, in order to draw attention to the importance of recording carefully the occurrence of iron rust in an interment of the Stone or Bronze Ages, for, as Mr. Gowland points out, it is unlikely that in ordinary circumstances an iron object of, for example, the later Stone Age, would be at this date anything but a mass of rust.

There is one argument bearing on the general question of the priority of iron or bronze that I do not remember to have seen noticed, and though its application is limited, it may be worth stating. In the bed of the river Thames from Windsor to Chelsea have been found, from time to time, numbers of relics of past ages, ranging from the stone implements of the Drift up to our own time. The materials of which these remains are made are of all kinds, flint and other stones, bronze, iron, wood, and so forth. All these materials, with the single exception of iron, have undergone much the same alterations in the bed of the river as would have occurred had they been buried on land, though there may occasionally be differences in the degree of change. When an iron object, such as a sword, is recovered from the river, it is more often than not found to have retained for the most part a perfectly smooth surface, upon which any ornamental features are often as plainly to be discerned as if recently executed. In this condition I have seen iron swords of pre-Roman, Roman, Saxon, and later times; but among the

hundreds of iron articles from the Thames that I have had through my hands, I have never encountered one piece that could not with certainty, and from extraneous evidence, be attributed to some period more recent than the Bronze Age. The position therefore would seem to be this:—The Thames Valley has been inhabited by man at all times, from the earliest of which we have knowledge, this continued habitation being proved by remains of all the periods with which we are acquainted. We know, from other evidence, that man used iron implements at and after a particular period, and this knowledge is confirmed by the record of the Thames itself, in which relics of iron of all these succeeding periods have been found, the earliest of them fully as well preserved as the most modern. I do not think, therefore, that it is an unfair deduction to draw that if instruments of iron had been used in the Thames Valley in earlier times than is shown by the evidence of other sites (*i.e.*, an earlier than the Bronze Age) we must have encountered them. But as we do not meet with anything of iron that cannot be assigned to post-bronze times, we can only assume that man was unacquainted with the metal. The bed of the Thames is not the only spot that has the quality of preserving iron; other streams have the same peculiarity, if that term can be used, and a review of the probabilities would scarcely seem to be in favour of the theory that iron was known and used before and during the whole length of the Bronze Age, seeing that the many thousand discoveries have furnished no proof of it.

I cannot refrain from calling attention to one useful fact in connection with anthropology that has come prominently to the front during the last few years. It was common enough a generation or more ago, when discoveries of the early ages that we roughly call prehistoric were made in England, or in Northern Europe, to call in the aid of the anthropologist to help in determining the race or affinities of the occupant of the tomb. It was considered that with the primitive relics left by our own rude forefathers the methods of anthropology had an affinity and a proper place. But if it had been suggested to a student of Greek art that our methods could help to unfold and make clear the story of the origin of Hellenic culture, the claim would surely have been received with the haughty assurance that there could be no possible connection between the two subjects. It would have been urged that although Greek art had undergone vicissitudes, so that at certain times or places it stood at a higher level than at others, yet that in its essence it was a heaven-born gift that had descended upon the land of the Greeks, where it had flourished for a very few centuries, and had then passed for ever, owning no human parentage, and, it may almost be said, leaving no progeny. Such was the position taken up by most students of Greek art of the last generation, and it was a position that no one thought of assailing. But within the last twenty years a great and useful change has come over the methods adopted in attacking the culture problems of the Mediterranean area. It is now recognised in all centres of study that the most sublime and exquisite of human productions have their beginnings in the over-mastering need for the beautiful which is as much inborn with the warrior of the age of bronze as with the dilettante of the court of Lorenzo

the Magnificent. It is clearly seen that there *must* be a connecting chain joining in a long line of inevitable continuity the feeble and often laughable efforts at beauty of early Mediterranean man with the loftiest and most splendid artistic achievements that the world has ever seen. It is practically admitted that man's freedom, if not of thought, at any rate of expression, is in practice bounded by the limits of the culture stage of the period and country in which he lives; that while he cannot escape the influence of the preceding stage, he cannot on the other hand do more than make his own little step in the never-ending march of human progress, leaving to the next generation the task of following on. In other words, this is merely the recognition of the fact that the principle of evolution is as much applicable to the essentials of the highest art as it is in the realm of biology. Probably this proposition will scarcely be disputed, but it is one thing to accept an abstract proposition and quite another to apply it in a practical manner. And it is in the practical application of this principle that we have during the last two or three decades made such an advance in the field of archaeology which lies just on the other side of history. It is now seen that the similarity in the methods of burial, or of the objects associated with the dead, at the two ends of the Mediterranean, is scarcely likely to be an accidental coincidence, and that the fact of the discovery being on a classical site has but little if any bearing on its comparative value. The glamour of Homeric tradition has been so far cast aside that we can now, without incurring contempt, compare the relics from a Homeric site with the analogous remains from less historic lands, deal with them in the same way, and apply to them the same terminology. It is to the wonderful discoveries of Dr. Schliemann that we owe this great step; they were so unlike what, according to tradition, they should have been, that a new departure was inevitable, and by degrees their true bearing on the world's history was recognised. Since then many ardent and well-equipped workers have followed this new line of research, Mr. Arthur Evans, Professor Petrie, Mr. J. L. Myres and others, with the result that we have, at Oxford at any rate, a collection where the student can understand the beginnings of art, and realise the value of comparative anthropology.

I must now say a few words to record our sense of the great loss that we have suffered in the death, after a useful and honoured career, of our former President, Sir William Flower. To me he was a kind friend of more than twenty years' standing, and I shall always remember with affection his kindly face.

Sir William Henry Flower, K.C.B., LL.D., D.C.L., D.Sc., F.R.S., Past President and Vice-President of the Anthropological Institute, died on the first of July, 1899, at the age of 68 years. He was the second son of the late Mr. Edward Fordham Flower, of Stratford-on-Avon, and was educated at University College, London, and the Middlesex Hospital for the medical profession, which he entered by becoming a member of the Royal College of Surgeons of England in March, 1854. At that time this country became involved in the Crimean war, to which he proceeded as Assistant Surgeon to the 63rd Foot, and at the conclusion of the war received the Crimean Medal with clasps for Alma, Inkerman, Balaclava, and

Sebastopol, and the Turkish Medal. After his return to England he became a Fellow of the Royal College of Surgeons, and was appointed Assistant Surgeon to Middlesex Hospital and Curator of the Museum of that School, and practised as a surgeon till 1861, when he was appointed Conservator of the Museum of the Royal College of Surgeons, a position he retained till the summer of 1884, when he was made Director of the Natural History Department of the British Museum at South Kensington on the retirement of the late Sir Richard Owen.

Although Sir William Flower has earned for himself a great and well merited reputation by his labours in the field of Zoological Science, and in connection with Zoological Museums, yet on the present occasion it is necessary to confine the limits of this notice of him strictly to his work as an anthropologist.

It was in 1877 that he became a member of this Institute, and began to identify himself prominently with anthropology, chiefly, I believe, through the influence of his old and valued friends, the late Mr. George Busk and Professor Rolleston. About this time he began a revision of the Catalogue of the Human Osteology contained in the Museum of the Royal College of Surgeons, the numerous additions to which, chiefly made by his exertions, having rendered the previous catalogue by Sir Richard Owen practically useless for the purpose it was designed. Although he published in conjunction with Dr. Murie an account of the "Dissection of a Bushwoman" in the *Anthropological Review* as far back as 1867, it was not till 1878 that the first of his more serious contributions to Anthropological Science appeared, a lecture delivered at the Royal Institution on "The Native Races of the Pacific Ocean," and published in the Reports of that Institution for 1878. From that time onwards he was ever more or less engaged advancing knowledge both by pen and word of mouth in the department of anthropology. In 1879 his first paper on "the Osteology and Affinities of the Natives of the Andaman Islands" appeared in our *Journal*, and in the following year an equally important communication on "the Cranial Characters of the Natives of the Fiji Islands." In 1881 we had a paper from him on "a Collection of Monumental Heads and artificially deformed Crania from Mallicollo." The same year he did signal service to the cause of anthropology in this country and to this Institute in particular, in the first place, by the address which he delivered as President of the then Sub-Section Anthropology at the Jubilee Meeting of the British Association held at York, from which resulted a donation from the late Dr. Muirhead of Glasgow of £100 to this Institute, and in the second place, by the publication of the Catalogue, previously referred to, of Human Osteology in the Museum of the Royal College of Surgeons. By his lectures on anthropology, as Hunterian Professor, delivered at the College of Surgeons, and published in the *British Medical Journal* for several years about this period, while he was engaged in classifying and arranging the Anthropological Collection in the Museum, he did a great deal to familiarise members of the medical profession and others with the importance of the comparative anatomy of man, and was the means of bringing many specimens of human osteology to our museums, and not least, led the way to the

acquisition by the Council of the College of the large and magnificent collection of skeletons and skulls of the late Dr. Barnard Davis in 1880. Many of our Fellows will yet remember the Presidential Addresses he delivered at the annual meetings of this Institute in 1884 and 1885, published in our *Journals* for those years. In the first of these he discussed the aims and prospects of anthropology, while the subject of the second was the classification of the varieties of the human species. The period between 1877 and 1885 may be considered that during which his principal contributions to anthropology were made. Although short relatively to the time zoological literature had the benefit of his work, his anthropological contributions produced during it are of the greatest importance, containing as they do not mere descriptions of specimens, but the results also of new and original lines of thought and investigation, and generalisations of already acquired facts, so that they must ever remain as landmarks in the history of anthropology. The chief cause of his active participation in original research in anthropology slackening off at the period mentioned is attributable to the sphere of his labours having been transferred from the College of Surgeons Museum to the more elevated post of Director of the Natural History Museum at South Kensington in the latter part of 1884. Henceforth his work lay more in the administration of that large Institution than in the investigations of the Zoological and Anthropological Laboratory from which he was now removed, much to the loss of our particular branch of science. But although no longer able with his other duties to take as active a part in anthropological research as he would otherwise have done, we are indebted to him for many smaller contributions at our meetings and in our *Journal*, of which that on "The Size of the Teeth as a character of Race" deserves special notice, and not least for his last address delivered in the Sheldonian Theatre at Oxford as President of the Section Anthropology at the Meeting of the British Association in 1894, a most memorable occasion, apart from other considerations, as being the last meeting of the Association in which he and the late Professor the Rt. Hon. Thomas Henry Huxley attended and took part. Lastly, we must not be unmindful of the very valuable work he inaugurated, and was actively engaged in up to the time when ill-health was the cause of his retirement from the Directorship of the Natural History Museum, to advance the study of anthropology by the formation of a collection in that Museum to illustrate the comparative anatomy of man which would appeal to the thousands who during the course of the year visit that great Institution, and which we trust those succeeding him will relax no effort to develop to a still greater extent than declining health permitted him to do.

While the foregoing is a brief epitome of the work in anthropology which Sir William Flower has left behind him for the benefit of ourselves and future generations, no record of it would be complete without some reference of a personal nature to himself.

Dr. Garson, who has kindly furnished me with the facts of Sir William Flower's career, says, "any stranger making his acquaintance for the first

time could not fail to be impressed with his urbane and gentle manners. 'Professor Flower ist ein feiner Mann' was the remark made by the late Professor Braune of Leipzig after his first interview with him. To know him intimately was to love and esteem him and at the same time to hold him in veneration. I can only say for my own part that during the six years we were associated together at the College of Surgeons, I have never heard or known him utter an angry or unkind word, and when he had to find fault it was done in the gentlest and kindest possible manner. He was ever most considerate of others, and the greatest harmony and good feeling ever prevailed from the highest to the lowest of the staff; at the same time he never condescended to undignified familiarities or favouritism, but always upheld the position he had to maintain with dignity and grace." As in his official relations, so also in his home, which was everything to him, and amongst his large circle of friends he was greatly beloved and esteemed. On the other hand I feel sure that he would be the first to claim that no small part of his success was due to the support he ever received from the gifted and equally estimable lady who was for so many years his devoted partner in life, and has now, with a family equally devoted to their father, to mourn his irreparable loss.

The universal esteem in which Sir William Flower was held was shown by the crowds of sorrowing friends and colleagues who attended the funeral service at St. Luke's Church, Chelsea, where he had been a constant attendant and communicant since he took up his residence at South Kensington. The Institute was represented at the service by Mr. Rudler, Dr. Garson, and myself.

The name of Dr. Brinton was known and respected in every spot where anthropology was cared for. His wide knowledge, his industry, and his sympathetic intelligence made him a welcome visitor at all times. Daniel Garrison Brinton was born in 1837 in Chester County, Pennsylvania, and after graduating at Yale and the Jefferson Medical College he entered the army in 1862. While on active service a sunstroke incapacitated him from continuing his career in the army, and he settled in Philadelphia and occupied himself with the literary side of his profession. From his student days, however, he had been much interested in ethnological questions, and was a prolific writer. He established a library and a printing house exclusively for aboriginal American literature, and from this press several valuable works were issued. He filled the office of President of the American Association for the Advancement of Science, a post as honourable in America as the corresponding one is with us. One of Dr. Brinton's latest acts was to present his valuable library to the University of Philadelphia. He died on the 31st July last.

Such is the record, ladies and gentlemen, that I have to lay before you to-day. If I have been tedious I am sorry, but in that case you will be grateful that I have refrained from dealing with many other matters probably equally important that have passed through my mind.

THE OAK AND THE THUNDER-GOD.

BY H. MUNRO CHADWICK, M.A., Fellow of Clare College, Cambridge.

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INTRODUCTION.

THE object of this paper is to discuss the connection between the sacred oak and the cult of the thunder-god. For this purpose it is necessary to give an account, first, of the cult of the thunder-god as practised by the chief peoples of Europe, and secondly, of the tree-sanctuaries which are found among the same peoples. After this we may consider the evidence for connecting the sacred oak with the cult of the thunder-god; and in conclusion an attempt will be made to give some explanation of this connection. Since the myths and cults of the Greeks and Romans are comparatively well known, it seemed unnecessary in most cases to do more than give references to easily accessible authorities. On the other hand I have thought it advisable to illustrate at somewhat greater length the less familiar religions of the northern peoples. In the course of the discussion I hope to show that the thunder-god was the chief deity of the early inhabitants of Europe, and further that the temples of late heathen times were, to a great extent, developed out of tree-sanctuaries. I think, therefore, it will be admitted that the subject is one of considerable importance for the study of early European religion.

CHAPTER I.

§ 1. *The Thunder-God in the North.*

H. Petersen in his book *Om Nordboernes Gudedyrkelse og Gudetro i Hedenold*, has shown that in the North during the last centuries of the heathen age Thor was more worshipped than any other god, and that his cult bears every sign of a remote antiquity. This subject has been so fully and ably discussed by Petersen that it is needless here to do more than briefly recapitulate the main arguments which he has advanced.

They are as follows:—(1) Whenever mention is made of figures of the gods in temples, Thor's figure seems always to take the chief place. In no case is it stated that the central position was occupied by any other god. In several cases Thor's figure is the only one mentioned. (2) In compound personal names *Thór-* is vastly more frequent than the name of any other god. Thus in the *Landnáma Bók* *Thór-* occurs in 30 men's and 21 women's names, distributed over about 800

and 300 persons respectively. On the other hand *Frey-* occurs only in two men's names and one woman's name (four persons in all), while *Óðin-* does not occur. The significance of these statistics is shown by the fact that persons who bore the name of a god were regarded as being under his special protection.¹ In place-names also *Thór-* is far more frequent than the name of any other god. (3) When Scandinavian gods are mentioned by foreign writers, either Thor is mentioned alone or he is represented as the chief of the gods. (4) Especially significant is the title *Miðgarðs Véurr* "sanctifier of the earth" which is applied to Thor in the *Edda*. Petersen illustrates this by the use of the phrase *þur wíki þísi kuml* (or *þ.u. þási runar*) "may Thor sanctify these mounds" (or "these letters") which occurs on two monuments in Jutland. The same idea is symbolically expressed by the representation of the hammer on several inscriptions in Jutland and Sweden. That the hammer was used at funerals is made probable by the account of Balder's funeral in *Gylfaginning* 49, where Thor consecrates the pyre with his hammer. A similar usage at weddings may be inferred from the story in *Thrymskviða*. Petersen infers that the hammer was used on many other important occasions, especially at the opening of the assembly. Hammers used as personal adornments have frequently been found. That they were used also in public worship is made probable by Saxo's account (xiii, p. 630) of the large metal hammers (*malleos Ioviales*) which Magnus Nielsen carried away from a temple of Jupiter on one of the Swedish islands (about A.D. 1130). As sanctifier and guardian of the home Thor's figure was carved upon the *öndvegissúlur* "pillars of the high-seat" (the place of honour reserved for the head of the house). The reverence attached to these pillars is shown by several stories dealing with the colonisation of Iceland. The colonists brought their high-seat pillars with them. Thorolfur threw the high-seat pillars of his temple overboard on approaching land and accepted the direction which they took as an indication where to fix his new home.² Hallsteinn, son of Thorolfur, prayed Thor to send him high-seat pillars.³ (5) It is likely also that Thor was regarded as the patron of the assembly. In Iceland, Thursday was the day on which the *Alþingi* (general assembly) was opened. This was also the case with the *Gulaping* in Norway and with most of the district assemblies in the Danish islands. (6) Evidence for the cult of Thor in time of war is given by the account of Styrbiörn's campaign against Eirekr, king of Sweden, and by Dudo in his account of the Normans.

Such are, according to Petersen, the main features of the cult of Thor. The importance of the cult may be estimated by the fact that it embraces every side of public and private life, whereas the cult of Othin is concerned chiefly with the military side. Lastly Thor seems to embody the ideal of the national character; he is represented as fearless, impetuous, but benevolent towards men. Othin on the other hand is distinguished rather by shrewdness and cunning.

¹ Cf. *Eyrbyggja Saga*, c. 7, 11, and the passage from *Grænl. Annáll.* appended to Vigfusson's edition of the *Saga*.

² *Eyrbyggja*, s. 4.

³ *Landnáma Bók*, i, 23.

It is unfortunate that no figures have survived which may be identified with certainty as representations of Thor. Yet there can be little doubt how he was depicted, for the Sagas contain several stories of his appearing to his friends or enemies upon earth.¹ He is represented as a man of large and powerful build, in the prime of life, and having a red beard. The equipment of the god as depicted in the mythological poems is remarkable, especially from the negative side. His weapon is almost always the hammer.² He is never represented as possessing spear, sword, shield, helmet, or coat of mail. Again in travelling he either goes on foot or drives in a carriage drawn by goats. A horse is never ascribed to him. In *Grímnismál* 29, immediately before the enumeration of the horses which the gods ride when they come to do justice under Yggdrasill's Ash, it is stated that Thor has to wade through several streams on his way thither. The horses of Othin, Freyr, Heimdallr and Balder are mentioned also elsewhere. The antiquity of the representation of Thor may be estimated by the absence of the horse and of all the ordinary weapons of war. His equipment indeed resembles that of a hero of the Stone Age rather than of any subsequent period. Both from the shape of the hammer as depicted on Runic stones, etc., and from the fact that the word (O.Norse *hamarr*) also means "rock" and is perhaps related to O.Bulg. *kamy* "stone" and kindred words, it appears not unlikely that Thor's hammer was originally a stone implement.

Human sacrifices in connection with this cult are seldom mentioned. They were known, however, both among the Normans (*Dudo*, i, 1) and in Iceland (*Eyrbyggja*, s. 10³), though in the latter case the victims were probably condemned criminals.⁴ It is somewhat remarkable that in both these cases death seems to have been inflicted by felling with a wooden instrument. Elsewhere sacrifices of horses and oxen⁵ and offerings of bread and meat⁶ are mentioned. Besides the sacrifices there is one other point which deserves mention. In Icelandic temples it seems to have been the custom to keep a sacred fire in the *afhús* (cf. p. 28) which was never allowed to die out. Since the temple described in *Kjalnesingas.* 2, where this notice occurs, was primarily a Thor-temple, it is likely that this holy fire was connected with the cult of Thor.

It has been shown by Petersen (see above) that the blessings conferred by Thor apply to all departments of human life. His connection with weather and natural phenomena is surprisingly little evidenced in Norwegian-Icelandic literature. This is no doubt due in part to the disuse of the old word for "thunder." In Denmark and Sweden on the other hand, where the words *torden* and *aska* (*toraka*) are preserved, the connection seems to have been more clearly kept. But it is rather as the protector of the human race against trolls (the

¹ Cf. especially *Fornmanna Sögur*, ii, 182.

² *Saxo*, iii, p. 118, provides him with a club.

³ Cf. *Kjalnesingas.* 2.

⁴ For a similar custom among the Gauls cf. *Cæsar*, B.G., vi, 16.

⁵ *Flateyjarbók*, ii, 184.

⁶ *Olafs s. helga*, 33ff.

spirits of the desert), as the granter of land, the guardian of the laws and customs of civilised life that Thor is best known. In connection with Petersen's supposition that Thor was regarded as the patron of the assembly it is perhaps worth recalling *Grímnismál* 29, where Thor is represented as proceeding to do justice under Yggdrasill's Ash. None of the other gods are mentioned by name in this passage.

In conclusion a few words must be said in regard to Thor's family relationships. He is called the son of Othin, but this can hardly be an original feature, for his cult appears to be much older than that of Othin. His mother is called Fiörgyn¹ or Iörð ("earth"). His wife is Sif,² his sons Módi ("the courageous") and Magni ("the mighty"), his daughter Þrúdr.³ The lateness of the last four names is shown by their allegorical character. The nature of Thor's relationship to the human community is well illustrated by the choice of *Sif* as the name of his wife. Lastly it is worth observing that no royal or noble family seems to have traced its genealogy to Thor.

§ 2. *The Thunder-God of the Continental Germans.*

Among the continental Germans and in England very few traces of this cult have survived. In the "Old Saxon" renunciation formula *Thunær* is mentioned together with *Woden* and *Saxnot*. Again the inscription on the Nordendorf brooch, the meaning of which is not altogether clear, ends with the words *wigi þonar*, which corresponds exactly to the formula employed on certain monumental stones in Jutland (*cf.* p. 23). The earliest certain evidence for the existence of the cult is the phrase O.H.G. *donares tag*, O.Engl. *þunres dæg* as a translation of Lat. *dies Iouis*.⁴ It is worth observing that among the Franks in the seventh century St. Eligius († 659) found it necessary to forbid the celebration of Thursday festivities.⁵ With this may perhaps be compared the fact that in many parts of Germany Thursday has been the favourite day for weddings down to modern times. The German thunder-god is sometimes mentioned under his Latin name, *e.g.* in the *Indiculus Superstitionum* and in Bonifacius, *Epist.* 25, where mention is made of a priest who "sacrificed to Iupiter and ate the sacrificial meat."⁶

It is uncertain how far the attributes by which Thor was distinguished in the North were applied to the thunder-god on the continent. In the Frisian

¹ Identical with Goth. *fairguni* "mountain," O.Engl. *firgen*- "forest," etc.

² The same word is found in the other Germanic languages (Goth. *sibja*, O.Engl. *sib*, O.Sax. *sibbia*, O.H.G. *sippa*), in the sense of "relationship" (in O.Engl. and O.H.G. also "friendship," "peace"). In Old Norse only the pl. *sifar* "relationship," occurs.

³ Identical with O.Engl. *þrȳþ* "strength."

⁴ The names of the days of the week were borrowed probably between the second and fourth centuries.

⁵ Grimm, *Deutsche Mythologie*, iii, 402.

⁶ It is somewhat remarkable that the Germanic Iupiter is not mentioned by the earlier Latin writers. The only god besides Mercurius and Mars to whom Tacitus refers at all frequently is "Hercules," and it has been generally assumed that under this name he meant the thunder-god. This, however, does not seem to me to have been satisfactorily established.

story of the twelve Asegen,¹ if the implement borne by the god is an axe,² it is very likely that it is the thunder-god who is meant. If so this would be valuable evidence for proving the connection of the thunder-god with the laws. Another possible reference to the axe of the thunder-god occurs in the Old English dialogue of Salomon and Saturn (ed. Kemble, p. 148).³

§ 3. *The Keltic Thunder-God.*

Very little is known about the gods of the ancient Kelts. There was, however, a god named *Taran*, who is mentioned by Lucan (I. 446) and whose name appears also in inscriptions as *Tanarus*, *Taranucus*, *Taranucnus*.⁴ Lucan says that he was honoured with human sacrifices. Now the form *Tanarus* corresponds exactly to **punuraz*, the Germanic name for thunder and the thunder-god, while *Taran* differs therefrom only by metathesis of *-n-* and *-r-*. The latter may be identical also with Mod. Welsh *taran* "thunder." It is known that the Kelts had a god "Iupiter"; Cæsar (B.G., vi. 17) states that, like other nations, they regarded him as the ruler of the gods. Since the Latin Iupiter is likewise the thunder-god, there can be little doubt that *Taran* is the god meant by Cæsar. This conclusion is further confirmed by the dedicatory inscription *I. O. M. Tanaro* found at Chester and dating from A.D. 154.⁵ It is likely enough that the god corresponded to some extent in attributes, as well as in name, to the Germanic thunder-god, for there seems to have been much similarity between the two nations. But the evidence is not sufficient to enable us to arrive at any certain conclusions.

§ 4. *The Baltic Thunder-God.*

The evidence for the cult of the thunder-god amongst the ancient Prussians is much more extensive, but unfortunately it is late and not free from suspicion. Grunau gives the god's name as *Perkuno*⁶ and says that together with the gods Patollo and Potrimpo he was believed to inhabit the sacred oak at Romove. He was supposed to commune with the priests there in thunderstorms. In this way the fundamental laws of the nation were believed to have been imparted by him. In his honour a perpetual fire was kept burning under the oak. The priest who allowed this to die out was condemned to death. According to Grunau (Tr. II, cap. v, § 1) *Perkuno*'s likeness, as depicted on King Widowuto's banner, was that of a middle-aged man with black beard and wrathful expression of countenance ;

¹ v. Richthofen, *Friesische Rechtsquellen*, p. 439f.

² The reading is uncertain.

³ There is no direct reference to the god in this passage, but cf. Saxo, xiii, p. 630.

⁴ *Taranucus* in a Dalmatian inscription (C.I.L. 3, 2804); *Taranucnus* in two Rhenish inscriptions (Brambach, C.I.Rh. 1589, 1812); on these names see Much, *Festgabe f. Heinzel*, p. 227f.

⁵ Cf. also *Taranin Iouen* in a scholion to the above passage of Lucan (Usener).

⁶ Identical with Lith. *perkūnas* "thunder," which is still used personally in folk-songs ; cf. also Michov in Grynaeus, *Novus Orbis Terrarum ac Insularum Veteribus Incognitarum*, Basel 1537, p. 519, who says of the Samagitti (in East Prussia) : *diis suis falsis, præcipue deo lingua eorum appellato Perkuno, id est tonitru, ad focos quisque suos offerebat libamina.*

his head was crowned with flames. Among the holy symbols of the Lithuanians, according to Æneas Sylvius, was a huge iron hammer. From the place-name *Heiligenbeil* it is likely that similar symbols were used among the Prussians.

At the present time it is customary to regard the authorities for the ancient Prussian religion, especially Grunau, with the greatest scepticism. Some writers have even gone so far as to doubt the existence of a god Perkuno. This, however, is certainly unjustifiable.¹ What especially makes for the credibility of Grunau's account in the main, distorted and embellished though it is without doubt, is the fact that there is scarcely one of the religious observances mentioned by him for which a parallel can not be found in some other European people, generally at a very early period of history.² In many cases these foreign customs can not have been known to Grunau. The Northern cult of Thor offers several points of resemblance to Grunau's account of Perkuno. It has been shown above that there is some reason for regarding Thor as the god of the Assembly. This goes far towards confirming the conception of Perkuno as the law-giver. Again the perpetual fire in honour of Perkuno may be compared with the perpetual fire which was kept burning in Thor's temples in Iceland. Lastly the portraiture of Perkuno on the banner strongly resembles the Northern portraiture of Thor. The banner is no doubt fabulous, but the picture may have been drawn from figures of the god such as the one which is stated to have stood in the oak.³

§ 5. *The Slavonic Thunder-God.*

In the treaties mentioned by Nestor (*Chron.* 21, 36, etc.) the Varangians call to witness their god Perun. It is very likely that the Northern god Thor is meant, but he would seem to have been identified with a native god and to have adopted the Slavonic name.⁴ That the cult of the thunder-god was nothing new among the Slavs is clear from Procopius' statement (*Gothic War*, iii, 14) that "they consider one god, the creator of the lightning, to be the only lord of all things."

§ 6. *The Thunder-God amongst the other peoples of Europe.*

It is unnecessary here to discuss the cult of the thunder-god among the ancient Greeks and Romans. That the Greek god Zeus bore this character is

¹ Cf. Zeuss, *Die Deutschen und die Nachbarstämme*, p. 41. It should, moreover, be remembered that the latest of the writers whom I have quoted, Grunau and Michov, wrote within a century of the death of Vitoldus (Vitovt), in whose reign (1392-1430) the Baltic tribes were still mainly heathen. Æneas Sylvius (Pius II, Pope 1458-1464) is practically a contemporary authority.

² I hope that in several cases this parallelism will be made clear in the following pages.

³ It is possible, though hardly likely, that the religion of the Prussians was influenced by that of the North in late heathen times. Gothic influence at a very much earlier period is more probable.

⁴ The name is identical with Russ., Čech. *perun* "thunderbolt," and probably also with Lith. *perkūnas*, though the loss of the *-k-* is still unexplained. Much (*Festgabe f. Heinzel*, p. 212ff) holds that both *perun* and *perkūnas* are loan-words from Germanic, but his theory seems to me to be beset with overwhelming difficulties.

clear from the epithets applied to him such as *τερπικέρανος, ἀργικέρανος ὑψιβρεμέτης, ἐριβρεμέτης, στεροπηγερέτα*. He was also a god of the rain. In this connection it is worth noting that a rain-charm was in time of drought practised by the priest of Zeus on Mount Lykaïos in Arcadia. The ceremony consisted in dipping an oak twig in the sacred stream (*cf.* Paus. viii, 38, 3). With this may be compared the Roman *aqualicium* which took place at the temple of Jupiter on the Capitol.¹ The connection of the god Jupiter with the thunder and with the phenomena of the weather in general is so well known that it will be sufficient here to refer to Preller, *Römische Mythologie*, p. 190ff.

§ 7. Conclusion.

The foregoing brief summary is enough to show that the cult of the thunder-god was in early times common to most of the Indo-Germanic speaking peoples of Europe. The Greek and Roman thunder-gods, as might reasonably be expected from the identity of their names *Ζεύς* (Voc. *Ζεῦ πάτερ*, Hom.)—*Iū-piter* (*Iuppiter*), seem to have had common features even apart from the influence which was exercised by the one people upon the other in historical times. It may reasonably be supposed also that such was the case with the Keltic *Tanaros* (*Taranos*) and the Germanic *Þunraz*, where there is the same identity of name. Lastly, it has been shown that the Prussian cult had several points of resemblance to that of the northern Germans. Here also a similarity of names is not wanting, for *Perkūnas* is closely related to *Fiörgyn*, the name of Thor's mother.

CHAPTER II.

§ 1. The Germanic Tree-Sanctuary.

The Northern temple in late heathen times seems to have been shaped much like a church with an apse-shaped building (*afhús*) at the east end. The *afhús*, which in Iceland seems not to have been open to the rest of the building, was the sanctuary proper and contained the figures of the gods, the altar with the oath-ring and blood-kettle and the perpetual fire. Petersen, however (*op. cit.* kap. 2), believes that there was another form in use, namely the round temple, of which he thinks the round churches, which occur in all Teutonic lands, are a relic. He believes that this is the more original form and that it is a development of the grove-sanctuary. In the more usual type of temple the *afhús* was the original sanctuary, while the long rectangular building (*langhús*) was a later addition and due to the exigencies of the sacrificial feast.²

Temples were known among the other heathen Germanic nations in the early middle ages. In the sixth century a Frankish temple was destroyed by

¹ Tertullian, *Ap.* 40.

² It is possible, of course, that the form of the temple was influenced by that of Christian churches in the British Isles.

Radegund, wife of Chlotar.¹ Gregory of Tours² describes a temple at Cologne which contained figures of the gods and in which sacrificial feasts were held. In Augustine's time the English had temples which were capable of being turned into churches.³ The Frisians and Old Saxons also seem to have had temples, but the notices are not always clear. The word *fanum*, by which these sanctuaries are usually denoted, is also used of the "Irmisul," which was an upright pillar. In other cases again it is clear that the Germanic invaders had appropriated Roman temples to the use of their own gods. The true Germanic temples, except in Iceland, seem to have been usually, if not always, made of wood.

In earlier times the evidence for the existence of Germanic temples is very meagre. The clearest case is Tacitus, *Ann.* i, 51, where it is stated that Germanicus "raised to the ground the temple which they called the temple of Tamfana and which was most frequented by those tribes." In *Germ.* 40 mention is made of the "templum" of Nerthus, but it is not unlikely that the word is loosely used for "sanctuary" and refers to the holy grove mentioned just before.

According to *Germ.* 9 the Germans "deem it to be inconsistent with the majesty of the gods to confine them within walls or to represent them after any similitude of a human face; they dedicate groves and woods and call by the name of gods that invisible thing which they see only with the eye of faith." Sacred groves are mentioned by Tacitus in several other places. According to *Germ.* 39, the Semnones had a wood of immemorial antiquity and holiness; according to *Germ.* 43, the Nahanaruali had a grove of ancient sanctity. The sanctuary of Nerthus (*Germ.* 40) was an island grove. Arminius' forces assemble in a wood sacred to Hercules (*Ann.* ii, 12); Civilis brings his army together in a sacred wood (*Hist.* ii, 14). These sacred groves contained altars (*Ann.* i, 61), and *effigies et signa quaedam* which the priests carried into battle (*Germ.* 7). With the last passage may be compared *Hist.* iv, 22, from which it appears that the *effigies* were figures of wild beasts.

The accounts of later writers fully agree with Tacitus' evidence. Claudian (*Cons. Stil.* i, 288) speaks of "groves grim with ancient religious rites and oaks resembling a barbaric divinity" which he hoped the Roman axes would fell. In the *Translatio S. Alexandri* (*Mon. Germ.* ii, 676) it is stated that the Saxons worshipped trees and streams. Similar evidence is given by the occurrence of place-names such as *Heiligenloh*, *Heiligenforst*, *Heiligenholtz*. In the North place-names ending in *-lund* probably denote the former presence of grove-sanctuaries. There was a holy grove beside the Swedish temple at Upsala, one evergreen tree being regarded as especially sacred. The legendary sanctuary at Glæsisvölr (*Hervarar Saga* 1; *Forn. Sög.* i, 411) was probably connected with a holy grove; *Glæsir* here is, perhaps, identical with *Glasir*, the name of the tree in Valhöll (Othin's dwelling-place).

There is an obvious connection between these sacred groves and the "guardian

¹ *Acta Bened.* s. i, p. 327.

² *Vitæ Patrum*, 6.

³ Bede, *Hist. Ecol.*, i, 30.

tree" (Vårdträd) which is found standing beside the homestead in many districts of Sweden.¹ Mannhardt describes how formerly every house in the sailors' quarter of Copenhagen possessed an elder tree which was tended with the greatest reverence and regarded as the dwelling-place of the guardian spirit of the house. In the Northern mythology Valhöll has beside it a sacred grove or tree (*Læraðr, Glasir*). I have tried elsewhere² to show that the evergreen tree at Upsala was regarded as the Vårdträd of the Swedish nation and that the conception of the "world tree," Yggdrasill's Ash, may have arisen from the idea of a Vårdträd of the divine community.

We may now return to the discussion of the Northern temple. The "langhús" seems to have closely resembled the hall of an ordinary large dwelling house. Like this it contained the "high-seat pillars" which stood beside the seat of the owner of the temple. Indeed there can be little doubt that the langhús is copied directly from the hall and that originally it formed no part of the temple proper. Originally it would seem to have been the residence of the priest or chief who presided over the temple and provided the feasts.

Petersen's suggestion that the "afhús" (the sanctuary proper) is a development of the holy grove is rendered probable by the following considerations:—(1) The temple appears to have been of comparatively late origin among the Germanic peoples. The passage quoted above from Tacitus (*Germ.* 9) practically amounts to a statement that the Germans had no temples, though in one or two instances temples seem to be actually mentioned by him. (2) The Old English word *hearg, hery*, which is used to translate *sacellum, lupercal, simulacrum, fanum, templum*, is apparently also used for "grove" and is identical with O.H.G. *haruc* which is used to translate *lucus, nemus, fanum, ara*.³ (3) The sacred tree or grove is sometimes found standing beside the temple, as at Upsala. The same phenomenon is found among other European peoples, as in the case of the oak at Stettin destroyed by Bishop Otto (*cf.* p. 33), and the pine destroyed by St. Martin (*cf.* p. 34). In every case the tree seems to have been regarded with greater reverence than the temple. (4) In other European countries certain temples are distinctly stated to have been erected on the site of a holy tree or grove. Such was the case with the temple at Dodona and, according to tradition, with the temple of Iupiter Capitolinus at Rome. From these considerations it seems to me not unlikely that if the *langhús* is a development of the chief's dwelling, the *afhús* may bear some close relationship to the sacred grove or tree (Vårdträd) which originally stood beside the dwelling.

In conclusion it is worth mentioning that the sacred groves of the ancient Germans seem to have been used also as places of assembly, the meeting of the Thing being no doubt closely connected with religious festivals. Passages have been quoted above (p. 29) showing that the German armies assembled in sacred groves

¹ Mannhardt, *Baumkultus*, s. 51ff.

² *Cult of Odin*, p. 75ff.

³ With this may be compared O.H.G. *paro*, which is used to translate both *lucus* and *ara*, and is identical with O.Engl. *bearu* "grove."

during their wars with the Romans. It is probable that at the national assemblies in the wood of the Semnones (*Germ.* 39) the business transacted was political as well as sacral. Certainly the great assemblies at the Upsala grove-sanctuary met for more than merely religious purposes. The usual name for the place of assembly in the North is *þingvöllr* which must originally have meant "wood of the assembly," though *völlr* has come to mean "field" in the North.¹ It is in a forest-clearing that the gods meet to decide the fate of Starkaðr in *Gautreks Saga* 7. According to a mythological poem (*Grímn.* 30) the gods meet every day to dispense justice under Yggdrasil's Ash.

§ 2. *The Baltic Tree-Sanctuary.*

The only reference of which I know to the existence of temples among the Baltic tribes is a passage in Michov² which describes how Vladislaus extinguished the sacred fire at Vilna and destroyed the *templum et ara* at which the Lithuanians offered their sacrifices. That this was a real temple is made probable by the fact that shortly afterwards he speaks of the *turris* in which the sacred fire was kept.

On the other hand there is no other European people with whom the sacred grove occupies so prominent a position. Æneas Sylvius (*Hist. de Eur.* xxvi) describing the missionary journeys of Jerome of Prag among the Lithuanians, states that he came to a people who worshipped woods dedicated to devils. There was one wood sacred above all others, and in its centre an oak of great age which was especially regarded as the abode of their god. As Jerome continued to cut these trees down, a great crowd of women betook themselves with lamentations to Vitoldus³ complaining that "their sacred grove had been cut down and the house of their god taken away; in it they had been wont to solicit the divine favour and from it they had obtained rain and sunshine; now they did not know where to seek the god whose habitation they had taken away." Michov (*l.c.* p. 518) states that the Lithuanians "deemed woods and groves to be holy and regarded them as the habitations of the gods." In a subsequent passage he relates that the Samagitti considered even the birds and beasts which entered the sacred woods to be holy. They believed that if anyone injured these woods or anything in them, the devils would make his hands or feet to grow crooked. According to Erasmus Stella (*de Borussiae Antiquitatibus*, ii⁴), the Prussians said that the gods dwelt in groves and woods; here sacrifices were to be offered to them; from hence sunshine and rain were to be obtained. "They said that the gods inhabited the finest trees, such as oaks; from these trees enquirers heard replies given to them; therefore they did not cut down trees of this kind but tended them religiously as the houses of their deities. They treated the alder and several other trees in the same way."

¹ The word is identical with O.Engl., O.H.G. *wald* "forest." A similar change of meaning (from "grove" to "meadow") is seen in O.Engl. *lēah*.

² Grynaeus, *Novus Orbis*, etc., Basel, 1537, p. 518f.

³ Prince of Lithuania, see p. 27, footnote.

⁴ Grynaeus, *Novus Orbis*, etc., Basel, 1537, p. 581.

According to Helmold (*Chron. Slav.* i, 1), Germans were, in his day, admitted to all privileges among the Pruzi (Prussians) except the right of access to groves and springs; they thought that these would be polluted by the presence of Christians. A similar statement is made by Stella (*l.c.*) who adds that atonement for the intrusion of strangers could only be made by the sacrifice of a human victim.

Among the Letts a custom is found similar to that connected with the Vårdträd in the North. According to Mannhardt (*Baumkultus*, p. 52ff) it was usual even up to the present century to find beside the homestead a small grove which was regarded as the dwelling-place of the *Mahjus kungs* ("lord of the home") and honoured with small offerings.

Among the Prussians the nearest approach to a temple seems to have been the holy oak at Romove (Rickoiot), the chief sanctuary of the Prussians.¹ This was an evergreen tree with foliage so thick that, according to Grunau, no rain could penetrate it. In the stem stood busts of the three chief gods, and in front of each of these was placed the emblem of his cult, Perkuno's emblem being the perpetual fire. Round the oak were hung fine silk curtains within which no one was allowed to enter except the chief priests; the curtains might, however, be partially withdrawn to enable visitors to see the busts. The priests lived in tents round the oak; according to one authority² the *kirwaito*³ or high-priest lived within the curtain. In this oak Perkuno was believed to commune with the *kirwaito*, who was known as "God's mouth." The other priests and priestesses (*waidlotten*) were old widowers and widows, living in celibacy, and had to make known to the people the commands of the *kirwaito*. In the neighbourhood of the oak the Prussians held their religious, and no doubt also their political, assemblies.

Michov (*l.c.*) states that on the first of October the Samagitti⁴ held a great festival in their sacred woods at which the whole population came together and sacrificed to their gods, especially Perkunus. He states, moreover, that each family had in these woods a hearth at which they burnt their dead, and seats made of cork, on which were set food and drink for the souls of the departed.

§ 3. *The Slavonic Tree-Sanctuary.*

Holy trees and groves are found also among the Slavs. Thietmar of Merseburg (*Mon. Germ.* v, 812) states that Riedegost was completely surrounded by a forest, which was regarded with veneration and never touched by the inhabitants. In a subsequent passage (*l.c.* p. 816) he relates how in the year 1008

¹ Grunau, *Preussische Chronik*, Tr. ii, cap. v, s. 2; iii, cap. i, s. 2; cap. iv, s. 1.

² "Prisca Antiquorum Prutenorum Religio" in *Respublica sive Status Regni Poloniae, etc.*, Leyden, Elzevir, 1642, p. 297ff).

³ This word seems to be identical with Lith. *kriwāitis* on which Schleicher says: "jezt unbekant . . . es musz eine hohe würde bezeichnen."

⁴ From Grynaeus *op. cit.*, p. 524, it is likely that this passage refers, in part at least, to the assemblies at Romove.

Wigbert destroyed a grove called Zutibure,¹ which was honoured by the inhabitants in all respects as a god, and which had never been injured since the beginning of time. In the year 1124 Bishop Otto of Bamberg destroyed three Slavonic temples at Stettin.² He then prepared to cut down an oak which was regarded with great veneration by the inhabitants, as they believed it to be the dwelling place of a deity. Beneath the oak was a spring. The people, though they had allowed him to destroy the temples, besought him earnestly to spare the tree.

The Slavs, however, as has already been mentioned, also possessed temples. One of the temples destroyed by Otto contained a three-headed figure (*Triglaus*). A temple at Riedegost is mentioned by Thietmar in the passage to which reference has been made above. Saxo (xiv, 822ff, 841ff) gives a full account of certain Slavonic temples in Rügen which were destroyed by King Waldemar in the year 1169. One of these temples consisted simply of purple hangings, the roof being supported by pillars. It contained an oaken figure of Rugieuitus with seven faces. Another temple had an outer enclosure of walls and an inner one consisting of hangings, the roof here also being supported by pillars. In the temple stood a wooden figure of Suantouitus with four heads. The priest alone was allowed to enter within the curtains and was not allowed to take breath there. Another temple contained a figure with five heads.

These Slavonic temples bear a curious resemblance to the Prussian tree-sanctuary at Romove. Boetticher³ has made it probable that among the Greeks the earliest figures of the gods were made out of tree-stems, especially from the stem of that tree which was sacred to the god. The statue was in fact a development of the natural tree. If a similar development may be assumed for the Slavonic temple, the latter must come from a form very similar to the Prussian tree-sanctuary. An oaken image in a temple which had curtains for walls may very well come from a living oak surrounded with curtains. Possibly even the multiplicity of heads in the Slavonic idols may be due to the custom, which is found at Romove, of inserting busts in the trunk of the tree. These arguments seem to me to make it probable that the sanctuary at Romove faithfully preserved a type which was once common to the Slavonic and Baltic peoples. The very close relationship subsisting between these peoples is shown by the resemblance between their languages; for, so far as phonology is concerned, there can have been little difference between them at the beginning of the Christian era.

§ 4. *The Keltic Tree-Sanctuary.*

In spite of the paucity of our information concerning the religion of the ancient Kelts, it is quite clear that they had sacred groves and trees. Pliny (*N. H.* xvi, 249) states that the Gauls consider nothing more holy than the mistletoe and the tree on which it grows, provided that this is an oak. He then goes on to

¹ Apparently for *Seetibor* "holy forest"; cf. Russ. *bor'* "pine-forest."

² *Mon. Germ. Script.*, xii, 794.

³ *Der Baumkultus der Hellenen u. Römer*, p. 215ff.

describe the ceremonies connected with the cutting of the mistletoe, adding that they never practise any of their religious rites without oak-leaves. In conclusion he proposes an etymology of *Druidae* from Greek *δρῦς* "oak."¹ Lucan (i, 453) says that the Druids inhabit deep groves amid secluded woods. In another passage (iii, 399ff) he describes a grove-sanctuary in the neighbourhood of Marseilles. In Britain also the Druids had sacred groves; Tacitus (*Ann.* xiv, 29) relates how Suetonius Paulinus destroyed the Druids' groves in Anglesey. Though Druidism was put down by the Romans, tree-worship long continued in Gaul. Sulpicius Severus (*Vita S. Martini*, c, 10) states that St. Martin destroyed an ancient temple without meeting with any opposition from the inhabitants, but on his subsequently proceeding to cut down a pine-tree which was consecrated to a devil in the neighbourhood, he at once encountered resistance. It is worth noting that the Gaulish word for temple, *nemeton*, seems to have originally meant "grove."

§ 5. *The Greek and Roman Tree-Sanctuaries.*

For the tree-worship of these nations it will be sufficient to refer to Boetticher (*op. cit.*). Here it need only be observed that in classical times the tree-sanctuary had in most places been either wholly or partially displaced by the temple.

CHAPTER III.

§ 1. *The Association between the Thunder-God and the Oak.*

In the preceding chapter evidence has been given to show that among the Baltic tribes (1) the cult of groves and trees was exceedingly prevalent; (2) the explanation of this cult given by the people themselves was that these groves and trees were the habitations of the gods; (3) the tree most revered was the oak.

Is there any evidence to show that this tree-cult was connected with one god more closely than the rest? In most of the notices no particular god is specified, while in Grunau's account the oak at Romove contains the busts of three gods. Yet there is reason to believe that it is Perkuno, the thunder-god, with whom the reverence for the oak was originally connected. The thunder-god is essentially a god of the weather;² it is rain and sunshine which the Lithuanians hope to obtain from their trees. Again though three gods are mentioned in connection with the oak at Romove, yet it is always Perkuno who appears individually. It is he who speaks with the high-priest in the oak. Further it is stated that Perkuno's emblem was a sacred fire of oak-wood which was kept up perpetually. Lastly Hirt (*Idg. Forschungen* I, 479ff) has made it probable that the word (Lith.) *perkūnas* is

¹ In spite of what has been said to the contrary it seems to me probable that Kelt. *druid* is a derivative of a Kelt. stem *drū*- "oak," though there is no evidence for precisely this form in Keltic. The derivation is especially favoured by the Welsh re-formate *derwydd* "druid" from *derw* "oak." Cf. also the *Dru-nemeton* ("oak-grove" ?), where the Galatian council met (Strabo, xii, 5, 1.)

² According to Adam of Bremen, iv, 26, "Thor presides over thunder and lightning, winds and showers, sunshine and the fruits of the earth."

related to Lat. *quercus* (Idg. **perkyus*) "oak." Consequently the word can originally have meant nothing else than "oaken," and must have been an epithet: "the god of" (or "in") "the oak."

Among the ancient Germans also a similar association may be traced. Bonifacius¹ is said to have destroyed at Geismar in Hesse a huge tree which the inhabitants called "Jupiter's oak."² That groves sacred to the thunder-god were known among the ancient English is shown by such place-names as *punres-lēah* which must originally have meant "grove of thunder." In the North the association seems to be forgotten, yet an important trace of it is preserved in the word *Fiörgyn*, the name of Thor's mother. This word is closely related to Lith. *Perkūnas*, and like it, in all probability, a derivative of Idg. **perkyus*, "oak."

In regard to the Kelts it has been shown above:—(1) that the cult of the thunder-god seems to have been an important element in their religion; (2) that veneration for groves and trees was prevalent amongst them; (3) that the oak was apparently the tree most revered. The connection between the cult of the thunder-god and the reverence for the oak is shown by Maximus Tyrius, viii, 8:—"The Kelts worship Zeus; the Keltic image of Zeus is a lofty oak."

Among the Romans also the oak was associated with the cult of the thunder-god (*Iupiter*). Several writers³ give lists of trees which were sacred to various gods, and in these it is always the oak which is associated with Jupiter.⁴ Some of these passages may not perhaps be accepted as unimpeachable evidence for genuine Roman tradition, since the suspicion of Greek influence is possible. But there is other evidence of a less questionable character. The "civic crown" of oak-leaves which was given to a soldier who had saved the life of a comrade in war, and which was regarded as one of the highest distinctions which a Roman could gain, seems to have been associated with the cult of Jupiter.⁵ The temple of *Iupiter Feretrius* on the Capitol stood on the site of a sacred oak, to which, according to Livy (I. 10), Romulus brought the *spolia opima* which he had gained by killing the king of Caenina.

That the oak was associated with the cult of the Greek thunder-god Zeus is clear from several passages relating to the oak-sanctuary at Dodona (see below). The association was not peculiar to Dodona, as it was found also at the sanctuary of Zeus on Mount Lykaïos. For the rest it will be sufficient here to refer to a scholion on Aristophanes, *Birds* 480 which states that "the oak is sacred to Zeus."

The association therefore between the oak and the thunder-god is found among the Prussians, Germans, Kelts, Romans and Greeks. In conclusion mention may be made of the Albanian word *perendî, perndî* "god." If, as has been suggested,

¹ *Mon. Germ.*, ii, 343.

² If the customary identification of "Hercules" with the thunder-god is correct, Tacitus *silua Herculi sacra* (Ann. ii, 12) may be added.

³ Pliny, *N.H.*, xii, 2 (cf. xvi, 4): Phaëdrus, *Fab.* iii, 17.

⁴ Ovid (*Met.* 106) calls the oak "Jupiter's tree."

⁵ Cf. *Servius ad Aen.*, vi, 772.

this word is related to Lith. *perkūnas*, it is likely that the association may be traced also here.

§ 2. *The Sanctuary of the Thunder-God.*

The sanctuary of Zeus at Dodona, near Jannina, was one of the oldest, and in early times perhaps the most important of all the sanctuaries in Greece. In later times Zeus, together with Dione, had a temple at Dodona; but the early authorities mention only an oak or grove. The first reference is in the *Iliad* (xvi, 233ff):—"O lord Zeus of Dodona Pelasgian, who dwellest afar, who rulest over stormy Dodona, around thee dwell the Selloi, thy interpreters, with unwashed feet, sleeping upon the ground." The statement that the priests or Selloi slept on the ground is repeated by Sophocles (*Trach.* 1166f), who mentions also that the tree stood in a grove. Oracles were given by the rustling of the leaves¹—whence the tree is represented as endowed with speech—and by the murmuring of a stream which issued forth from beneath the oak.² The stream is called by Pliny (N.H. II, 228) "Jupiter's spring." The pigeons which frequented the grove were regarded as sacred.

There are several points of close resemblance between the Greek sanctuary at Dodona and the Prussian sanctuary at Romove. In both cases the oak is the dwelling-place of the thunder-god.³ The neighbourhood of Dodona is famous for thunderstorms;⁴ Perkuno manifests his presence in the thunder. Oracular responses are given forth by the oak at Dodona; so also by the sacred oaks of the Prussians. The priests sleep on the ground round the oak at Dodona; the Prussian priests live in tents round the oak at Romove. The sanctity attached to the pigeons in the grove at Dodona may be compared with the sanctity attached to the birds and animals which frequented the sacred groves of the Prussians.

These points of resemblance, however, are not confined to the Greek and Prussian sanctuaries. If "the Keltic image of Zeus is a lofty oak" and if, as Lucan states, the Druids lived in groves, sanctuaries like those at Dodona and Romove must have been in existence among the Kelts. Again the following passage from Claudian (*De Bello Getico* 545ff) seems to show that oracular responses were given by the sacred trees of the ancient Germans:—"Moreover we have encouragement from the gods. It is not dreams nor birds (which guide us), but clear speech issuing from the grove." It is also frequently stated, both in the North and among other German tribes, that no harm was allowed to be done to any living being in the neighbourhood of a sanctuary. Again for the spring beneath the oak parallels may be found in northern Europe. The sacred oak which Otto found at Stettin (*cf.* p. 33) had a spring beneath it. There was a spring in

¹ Cf. *Od.*, xiv, 327ff.; *Æsch. Prom.*, 848ff.; *Soph. Trach.*, 170f.; 1164ff.

² Cf. *Servius ad Aen.*, iii, 466.

³ For Dodona this is implied by *Il.*, xvi, 233ff. (quoted above). In a fragment of *Hesiod* also (No. 156 in Rzach's edition) Zeus is represented as living in the oak, but this depends on an emendation (*vaîev* or *vaîei* for MSS. *vaîov*).

⁴ Leke, *Travels in Northern Greece*, 4, 198.

the neighbourhood of the sacred tree at Upsala.¹ It is stated that the nature of this tree was not known; but like the oak at Romove it was evergreen. It is, perhaps, worth observing that the Upsala sanctuary may primarily have been connected with the worship of Thor. At all events Thor's image occupied the chief position in the temple. Lastly the world-tree, Yggdrasill's Ash, is likewise represented as evergreen, and stands over the "spring of Fate."

The results of this discussion may be briefly summarised as follows: There were sanctuaries of the thunder-god among the Greeks and Prussians, probably also among the Kelts, consisting of oaks standing within groves. Perhaps the sacred oaks were originally chosen by preference from one or other of the evergreen kinds.² Round these oaks the priests lived under somewhat primitive conditions of life. Further, there are resemblances in points of detail between the tree-sanctuaries of the Germans and Slavs on the one hand, and those of the Greeks and Prussians on the other, sufficiently striking to justify the suspicion that similar conditions may once have prevailed in the sanctuaries of these nations.

As regards the Germans³ perhaps some objection may reasonably be taken to the assumption in the last statement. There is, however, some indirect evidence to support it. It has been suggested above that in the Northern temple the "langhús" is a development of the dwelling-house, probably that of the priest or chief⁴ of the community, while the "afhús" seems to have taken the place of the sacred grove and to bear some close relationship to the Vårdträd which is found standing beside the ordinary house. Now there are traces that in early times the relative positions of the house and tree were sometimes different. In the hall of Völsung's palace, according to *Völsunga Saga* 2 (*Fornald. Sög.* I, 119), stood the stem of a huge oak, the branches and foliage of which spread out above the roof. A house of this type may obviously be a development of a tree-dwelling similar to the sanctuary at Romove. I do not know of any other example of a house of this kind in the North.⁵ Perhaps, however, the following possibility is worth taking into account. Can the "high-seat pillars" which stood within the hall, both of secular and sacred buildings, and were regarded with peculiar reverence, owe their origin to the former presence of an oak in the same position? It is not stated that they were made of oak-wood, but from their association with the thunder-god it is likely that such was originally the case.⁶ The figure of Thor which was carved upon them may be compared with the Slavonic idols discussed above.

¹ Schol. 134 to Adam of Bremen.

² It is worth noting that the Roman "civic crown" was originally made from the leaves of the evergreen oak (*ilex*); cf. Pliny, *N.H.*, xvi, 4.

³ In regard to the Slavs, I have tried to show above (p. 33) that the Slavonic temples in Rügen may come from tree-sanctuaries similar to that at Romove.

⁴ In the North the temporal chief seems to have been also the priest of the community.

⁵ The description of the thalamus of Odysseus (*Od.*, xxiii, 190ff.) may be compared.

⁶ It is perhaps worth suggesting that the *regin-naglar*, which stood in the pillars, may have been pegs used for ignition by friction, perhaps for the re-kindling of the perpetual fire, which, in view of certain customs existing in later times, may have been extinguished once a year. Or again it may have been for the kindling of the "need-fire" which was also perhaps connected

CHAPTER IV.

It has been shown above : (1) That the cult of the thunder-god can be proved to have existed among most of the Indogermanic-speaking nations of Europe. He appears to have been the chief deity of the Greeks, Romans, and Kelts, in pre-historic times probably also of the Germans (at all events in the North). Further if Procopius' statement (*Gothic War*, iii, 14), that in his time (the sixth century) the thunder-god was the only deity worshipped by the Slavs, be compared with the prominent position occupied by Perkuno in the religion of the Prussians, there can be little doubt that the thunder-god was originally the chief, if not the only deity of the Baltic and Slavonic peoples. (2) That among all these nations holy trees and groves are found. The tree most generally venerated seems to have been the oak. (3) That the oak seems to have been associated with the cult of the thunder-god among the Greeks, Romans, Kelts, Germans, and Prussians ; further, that oak-sanctuaries of the thunder-god showing striking features of resemblance are found among the Greeks and Prussians, and that there are grounds for suspecting that similar sanctuaries have existed among the Kelts, Germans, and Slavs. It remains now to enquire what can have been the original nature of the association between the thunder-god and the oak.

§ 1. *Mr. Frazer's Theory.*

Mr. Frazer holds that the oak was originally not merely the symbol or habitation of the god, but was itself the object of worship. In *The Golden Bough*, vol. ii, p. 291ff, he writes :—" If then the great god of both Greeks and Romans was represented in some of his oldest shrines under the form of an oak, and if the oak was the principal object of worship of Celts, Germans, and Slavs, we may certainly conclude that this tree was one of the chief, if not the very chief divinity of the Aryans before the dispersion." This passage must be read in connection with vol. i, p. 62 :—" In these cases the spirit is viewed as incorporate in the tree ; it animates the tree and most suffer and die with it. But according to another, and no doubt later view, the tree is not the body, but merely the abode of the tree-spirit, which can quit the injured tree as men quit a dilapidated house." Also with vol. i, p. 65 :—" When a tree comes to be viewed no longer as the body of the tree-spirit, but simply as its dwelling place which it can quit at pleasure, an important advance has been made in religious thought. Animism is passing into polytheism."

Originally therefore the oak was itself the deity ; the conception of it as the dwelling-place of the deity is a later development.

Mr. Frazer seems to me to assume too much in his statement (vol. ii, p. 291) that the oak was "not only the sacred tree, but the principal object of worship with the cult of Thor ; cf. Adam of Bremen, iv, 26 : *si pestis uel fames imminet Thor ydolo libatur*. In later times the sparks for the kindling of the "need-fire" were sometimes obtained by twisting a wooden peg round in an oaken post (cf. Grimm, *Deutsche Mythologie*, i, 502ff).

of both Celts and Slavs." His authorities for this statement are the passages quoted above regarding the tree-cult of the Lithuanians and Prussians,¹ and Pliny's account of the cutting of the mistletoe. But it is clearly stated in many places that the Lithuanians and Prussians regarded their groves and trees as the dwelling-places of the gods. Again Pliny, though he says that "the Druids . . . esteem nothing more holy than the mistletoe and the tree on which it grows, provided only that this is an oak," yet adds the following explanation for this fact:—"they believe that whatever grows on these trees is sent from heaven, and is a sign that the tree has been chosen by the god himself." The god is clearly not inseparable from the tree here. For illustrations of the original form of cult, wherein the tree and the tree-spirit are identical, Mr. Frazer has to go far beyond Europe.²

§ 2. *Objections to the above theory.*

Mr. Frazer's statements would lead one to the conclusion that among the Indogermanic-speaking peoples the development of polytheism from animism, or at all events the development of the thunder-god from the oak, took place subsequently to the "dispersion." Against this supposition, however, there are several serious objections:—

I. Though several of the Indogermanic languages possess words for "god" peculiar to themselves, yet it is practically certain that one word must have been used with this meaning even in the parent language. This is shown by the identity of the Indian, Italic, Keltic, Germanic, and Baltic words for "god" (Sansk. *devas*, Lat. *deus*, *dīuus*, O.Irish *dia*, O.Norse *tívar* (pl.),³ Lith. *dēvas*).

II. No tree-name is ever used for "god," nor is the thunder-god ever denoted by a word which may have been a tree-name. The Baltic-Slavonic designation of the thunder-god seems indeed to be derived from the Indogermanic name of the oak (**perkūus*), but it is a derivative and not the word itself. Hence it would seem to have been originally an epithet, "having something to do with the oak,"⁴ perhaps "living in the oak."

III. The name of the thunder-god in Keltic and Germanic is identical with the word for thunder. It is probable that a similar word must once have existed in Baltic and Slavonic. Otherwise the use of the words *perkūnas*, *perun* for "thunder," "thunderbolt" is difficult to explain. On the other hand the name of the thunder-god in Italic and Greek seem to have originally meant "sky," "daylight" (cf. Sansk. *dyāus* "sky," "day," also personified; Lat. *diēs* "day"). But, further, this word seems to be ultimately connected with Indogerm. **deiyos*

¹ I ought here to acknowledge my obligations to Mr. Frazer's book for several of these references.

² I have not the qualifications necessary for entering into a discussion of these examples, but I suspect that some of them might be capable of more than one interpretation.

³ The singular is only used as the proper name of a god: O.Norse, *Týr*; O.H.G., *Zio*; O.Engl., *Ti*, *Tiw*.

⁴ Cf. Gk. *φρωναίος* as an epithet of Zeus (Stephanus Byzantinus under *Δωδώνη*).

"god." This tends to show that among the Indogermanic-speaking peoples the conception of "god" in general was bound up with that of "sky," and that this was more especially the case with the conception of the thunder-god. It must be admitted that it is at all events more natural that the thunder should be conceived of as coming from the sky¹ than as proceeding from an oak or any other tree.

These arguments seem to me to tell greatly against the probability of Mr. Frazer's hypothesis, and in favour of the supposition that the conception of the thunder-god was originally bound up with or developed out of the conception of "sky." Therefore, since it is obvious that the two hypotheses are mutually exclusive, it remains to be seen whether the association of the thunder-god with the oak may be of secondary origin. In the following pages I will endeavour to show that this may be the case.

§ 3. *Conclusion.*

It has been shown above that in the Greek and Prussian sanctuaries of the thunder-god the priests lived beneath the sacred tree, and that there is some reason for supposing that the same custom may once have prevailed among the Kelts, Germans, and Slavs. One might, perhaps, say "chiefs" for "priests," for in the earliest times it is probable that the two offices were united. Such appears to have always been the case in the North,² while among the Prussians it is noteworthy that Bruteno, the legendary first high-priest, had formerly been king.

The question must now be asked: Is it necessary to suppose that the priests lived beneath the oak because it was sacred? Is it not possible that the oak acquired its sanctity from the fact that the priests lived beneath it?

According to Robertson Smith (*Religion of the Semites*, p. 197) the oldest sanctuaries among the Phœnicians appear to have been natural or artificial caves. He explains this fact by suggesting that in this district caves were the earliest form of human habitation. Now what is likely to have been the earliest form of human habitation in the more northern parts of the continent of Europe? Over a considerable part of the area, which in the earliest historical times was occupied by Germans and Slavs, caves would not often be available. On the other hand it is known that great portions of these countries were at one time almost completely covered with forest. Is it not probable that in primitive times the inhabitants of these regions made their home under the shelter of the larger forest trees? Though this may be granted, it will, perhaps, be said that such a state of society must lie too far back in the past for any reminiscences thereof to have survived in historical times. Yet according to Erasmus Stella³ the Prussians

¹ Cf. the Homeric phrase Ζεύς . . . αἰθέρι ναίων (Il. ii, 412), and Adam of Bremen, iv, 26: *Thor praesidet in aere.*

² I hope to deal with this question, so far as the Germanic nations are concerned, on some future occasion.

³ Grynæus, *op. cit.*, p. 574.

had a tradition that at one time they did not build houses but protected themselves and their children from rain and cold by caves and by the bark of trees. Iordanes (c. 5) says that the Slavs inhabited forests and marshes instead of cities. The dwellings of the Germans in the first century and of the Slavs in the sixth century, as described by Tacitus and Procopius respectively, seem to have been of a somewhat primitive description. But according to Tacitus the Finns in the first century were still without houses. They slept on the ground, and their homes consisted simply of a network of boughs¹ with which they protected their children and old people. Now the customs of a more primitive state of society are often preserved in sacral use when the community in general has reached a higher grade of civilisation. The life of the priests at Dodona is practically identical with that ascribed by Tacitus to the Finns. It may be conjectured therefore that this manner of life was once practised by the ancestors of the Greek race in general.

The sanctity of the oak has yet to be explained. There is reason for believing that the oak was once the commonest, as well as perhaps the largest tree in the forests of northern Europe. As such it would naturally be chosen for the habitation of the primitive community and consequently of all their belongings, their animals, their guardian spirits and their tribal god.² Evergreen trees, such as the oak at Romove or the tree at Upsala, would obviously have the preference. Subsequently, when the art of building had become known, the tree-home was deserted for the purposes of ordinary dwelling, but the sanctity of old associations clung to it, and it continued to be regarded as the home of the tribal god, as Tacitus (Germ. 39) says of the grove of the Semnones: *tanquam inde initia gentis, ibi regnator omnium deus*.

Between the primitive community beneath the oak and the Prussian sanctuary at Romove an intermediate stage may be traced. Herodotus (iv, 23) relates how far to the north of the Scythians, at the foot of lofty mountains, there dwelt a race of holy men called Argippaioi, each under his own tree. This tree was uncovered in summer but in winter was surrounded with an impenetrable covering of white felt. It is interesting to observe that, like the Druids these patriarchs were not only regarded as sacred, but were also appealed to as judges in all cases of dispute. Their homes were inviolable places of asylum and, like the priests of the ancient English, they possessed no weapons of war. Does the curtained tree-dwelling of these patriarchs represent an earlier form of the type seen at Romove? If so it is a natural inference that the curtain was originally no more than a protection for the primitive community against cold and wet.

¹ These dwellings would presumably be somewhat similar to the rough shelters still in use among the dwarf yellow races of Equatorial and Southern Africa.

² To this is probably to be added the fact that in primitive times the acorn seems to have been a common article of food. The tradition was preserved by both Greeks and Romans, cf. Frazer, *op. cit.*, ii, p. 292, footnote, and the references there quoted.

To sum up briefly the results of this discussion, I am of opinion that the thunder-god was supposed to inhabit the oak because this had formerly been the dwelling-place of his worshippers. Originally, no doubt, he was conceived of as dwelling in the sky; but from the very close connection which exists in all primitive communities between the god and his people, it became inevitable that he should be regarded as present in the home of the community. When the community took to building and deserted the tree-home, the sanctity of old associations clung to the latter, and the god was still supposed to dwell there. This is the stage of society represented by the Germans of Tacitus' day and by the Prussians up to their conversion.¹ The protection of the god over the new home was obtained, in the North at all events, by the importation into it of a pillar (probably cut from a holy tree) with the image of the god carved upon it. The third and last stage was reached by the accommodation of the god in a temple built like human habitations, but with certain peculiarities which may be due to reminiscences of the grove-sanctuary. This is the stage found in the North in the last days of heathendom. The change, however, was not complete, for, in certain cases at all events, the sacred tree or grove continued to exist by the side of the more modern temple.

It may be objected to this explanation that it is in no way specially applicable to the cult of the thunder-god. Against this I would answer that the thunder-god was *the* god of the primitive European community. He is the only god whose cult is common to the Indogermanic-speaking peoples of Europe. It is probable that these peoples, like the ancient Semites (*cf.* Robertson Smith, *op. cit.*, p. 39), though they recognised the existence of many supernatural beings, were yet not polytheists in the sense that they worshipped more than one god. According to Procopius the Slavs of the sixth century had only one god, namely, the thunder-god, though they also worshipped *δαίμονια*. The same was probably also the case in the North in early times. The cult of Frö seems originally to have been peculiar to Sweden and, together with that of Niördr, is capable of a special explanation. The worship of Othin was probably introduced at a comparatively late period. No other cult seems ever to have attained much importance in the North. According to Robertson Smith (*l.c.*) pantheons, such as the Greek, do not belong to the primitive stages of society. Each community has its god (and perhaps a goddess), its guardian spirits and tribal heroes. In the primitive European community the god seems always to have been the thunder-god.

DISCUSSION.

Mr. W. GOWLAND, after complimenting the author on his extremely interesting paper, called attention to several analogies between the sacredness of trees in early and later times in Europe and in the Far East—in Japan and Korea.

¹ It is noteworthy that the Prussians took their dead to the sacred woods, where, according to Michov, each family had a hearth specially reserved to it for cremation (Grynæus, *op. cit.*, p. 520).

In Japan in most villages there is a sacred tree, the actual tree, however, not being revered *per se*, but as the abode of some god or spirit. It was not regarded as the home of the spirit, for this is always in the sky, but merely as his terrestrial dwelling-place, where he could receive the offerings and reverence



SACRED PINE TREE IN A JAPANESE VILLAGE.

which the inhabitants of the village might wish to offer. The spirit was often held to be the peculiar guardian of the prosperity of the village, even when, as often happened, his nature was malevolent.

The tree was always encircled by a straw rope with pendants of straw or of straw and paper suspended from it resembling a fringe, as shown on p. 43. This is a perfect parallel of the curtain mentioned by the author. The offerings consisted of food and wine, frequently also of round water-worn stones, the latter being piled up around the base of the trunk.

These sacred trees belong essentially to Shintō spirits and the offerings made to them are evidently survivals of an ancient pagan cult. They are sometimes found in the immediate vicinity of a Shintō temple, and occasionally small Shintō shrines are fixed on their trunks. The tree in South and Central Japan is generally the pine (*Pinus Thunbergii*), but sometimes the camphor tree (*Cinnamomum Camphora*), not because there is any special virtue in either tree, but because they are the largest trees in the district.

In Korea he had found the same practice. The sacred tree was the largest in the neighbourhood. Its trunk was encircled by a rope with pendants of straw or of strips of rags. Heaps of water-worn stones offered by the villagers or by passing travellers were piled up at its base.

Groves of trees were not regarded as sacred in Japan, and temples were not built to resemble groves, but every important Shintō temple was erected in a grove, or in front of a clump of trees which were often of gigantic size.

MR. G. M. ATKINSON said that he would be glad to know if there was any connection or continuity between the Gospel Oaks and the Thunder God, and why the oak leaves are worn on the 29th of May, for the popular explanation is unsatisfactory. The battle of Worcester was fought in September. He thought their structural ornamentation went far to prove the timber origin of the Temples. The ritual of the rag-bush and its connection with Northern Mythology has been explained by Mr. M. J. Wallhouse; but it is Yggdrasil's ash-tree that comes in for the greatest share of its attention.

NOTES ON SOME CAVES IN THE TZITZIKAMA OR OUTENIQUA DISTRICT, NEAR KNYSNA, SOUTH AFRICA, AND THE OBJECTS FOUND THEREIN.

BY HENRY D. R. KINGSTON, M.D.

[PRESENTED JANUARY 9TH, 1900. WITH PLATE I.]

THE caves which I had the opportunity of exploring some years ago are to be found on the coast of South Africa, where it runs almost exactly east and west; they lie mid-way between Mossel Bay and Port Elizabeth, about 150 miles from either and 450 miles from Cape Town.

The harbour and village of Knysna, from which they are distant eastwards about 40 miles, stand on the meridian 23° E. of Greenwich. Rob Berg or Cape Seal, a distinct and remarkable promontory, is a point of the locality easily noted on any map. The coast for many miles hereabouts is rocky and abrupt, open or sandy spaces of shore being few and far between. The land falls suddenly and often almost precipitously from "the flats," a tableland or shelf at the foot of the



FIG. 1.—SKETCH-MAP OF PART OF SOUTH AFRICA, BETWEEN MOSSEL BAY AND PORT ELIZABETH: FROM INFORMATION SUPPLIED BY DR. KINGSTON.

Outeniqua Mountains, with a face to the sea of some 300 or 400 feet in height. This is scored or intersected by a number of small rivers—none of them of any great length—which rise in the hills to the north and have cut their way deep into the land, forming narrow and densely wooded kloofs. From this the district gets its native or Hottentot name of T'Zitzikama, meaning "plentiful or beautiful waters." It was near the mouth of one of these rivers, called "Groot River" because it is rather bigger than the rest, that the caves were situated.

The mouth of Groot River, like many other points in that district, is a spot of great beauty. The forest, with grand yellow-wood trees and many other sub-tropical species, comes down almost to the water's edge. A bold headland distinguishes its eastern side, clothed with "cripple bush" or scrub on most of its western face, but bare, rocky and rugged on its southern or seaward aspect. It is mid-way between the top, where the rough vegetation of the veldt above fringes over, and the tumbling sea below, that the rock—a quartzite or metamorphic sandstone—is fissured and bored into caves, and perhaps even excavated by the action of the waves in some past time when the levels of the water and the land were different, a condition of which there are many indications along that coast. The largest of these caves is placed so exactly in the extreme angle of this headland that it has two openings, one seawards with a view straight out over the southern ocean, the other looking westward over the sandy bar which always obstructs, and often entirely closes, the river mouth, to the wooded and less striking headland beyond it. In this feature Groot River mouth closely resembles that of Knysna Harbour, the difference being chiefly in the greater size of the latter and the fact that it is deep enough to allow of navigation. To our cave we scramble and climb from the shore below and enter by the roughly rounded window-like opening to the west. The floor is fairly even, but cleft by a great fissure extending upwards from the troubled water below and narrowing as it trends backwards deep into the rock behind, so that it is soon necessary to use candles (and lean sideways) in exploring its inner recesses. These have for us, however, but little interest, for the cave men, in one of whose rude homes we are standing, had evidently a morbid fear of the dark, and even the advantage of greater shelter from the wind and spray did not apparently tempt them into this convenient cleft; at all events, they left in it no remains, nor did they bury their dead there. The floor of this cleft is covered only with fine sharp unworn sand, the *débris* from the gradual disintegration of the rock above, and the droppings from a colony of bats. The floor of the outer cave, some 50 or 60 feet deep and quite 30 feet wide, is on the other hand covered to a very considerable depth with shell *débris* and chips and flakes of the local quartzite, usually, however, not of the yellow rock of the cave walls themselves, but rather of the same grey stone of which the boulders of the shore chiefly consist now. I do not remember to have seen and certainly I have not got a specimen of a flake hand-made from this yellow stone, which apparently did not chip kindly; so that it was usually very easy to distinguish between hand-made flakes and naturally scaled-off fragments of the rock. The *débris* consisted of shells more or less disintegrated and of various kinds. There were in this cave enormous quantities of mussels and great numbers of a large "ear shell," *Haliotis*.

The greater mass, however, of the deep, soft bedding on the floor consisted of white nacreous dust, the result of the entire disintegration of the softer shells of the oyster, which abound immediately below the cave, and were apparently as greatly appreciated by the old cave-dwellers as by modern explorers.

The favourite feeding place, or at any rate the "midden," in this cave seemed to be a ledge which ran out on one side of the chasm towards the larger opening of the cave, for there great heaps of shells were to be found.

I have not much to say about the remains of the "strand loopers" or "shore walkers," as they have been called, from their habit of life, which may have been left in this cave, since the upper levels of its deposits had already been much disturbed by the farmers and squatters in the neighbourhood, who value the "shell guano," as they call it, as a dressing for their lands, and who found it possible to hoist it in sacks to the veldt above, where they were able to bring a waggon sufficiently near to carry it away. It would have required much time and great labour to remove the confused masses above, into which pits had been dug, and lay bare the lower though probably much more interesting layers beneath them.

Our better fortune was to find another cave at no great distance from the first, smaller and at a greater height above the sea, but so difficult of access that it had evidently remained intact since the last *trek* of its migratory inhabitants. Here we found evidence of frequent and successive periods of habitation.

On the surface was a layer of fine white or yellowish sand, which is not water worn but merely the gradual powdering from the roof above.

It is greatly to be regretted that we had not the means carefully and systematically to remove the different layers of material and make a thorough scientific examination of the whole of the contents of the cave, but we arrived, by a series of soundings in various places, at a very fair idea of the nature of the deposits and even of the manuer of life of the former inhabitants.

Certain people saw fit, after our amateur excavation was completed, to point out how much better it would have been done had it been done officially; but the fact remains that no one had previously explored the caves at all, and I have just learned from a friend, who has resided within a few miles of the caves all his life, that no one has made any attempt to explore them since.

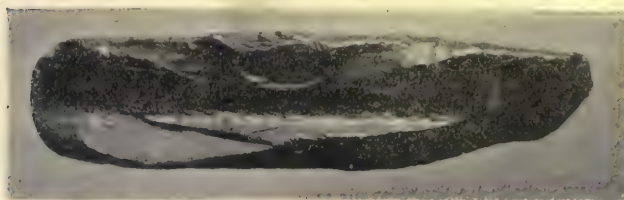


FIG. 2.—BONE IMPLEMENT FROM THE KNYSNA CAVES.
SCALE, ABOUT $\frac{1}{2}$ NATURAL.

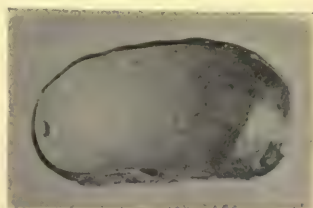


FIG. 3.—SHELL ORNAMENT.
SCALE, $\frac{1}{2}$ NATURAL.

Evidences of human occupation were found in the mass of shell *débris*; the circular blackened area of the primeval hearth; arrow heads and stone axes of the quartzite (Plate I, Nos. 1-8); a hard bone spoon or scoop or hide-scraper (Fig. 2), which bears evidence of long use and careful custody in the polishing of its rough surfaces; and a simple but elegant shell pendant (Fig. 3).

The patches of burnt shell which mark the places of the fires were at different levels, and now and then we came upon a layer of sand, which made one believe that some time had elapsed between one occupation of the cave and another. Deep down we would come upon a mass of ribbon-like "sea-grass," probably a sleeping place, while heavy flat stones, ground and hollowed on their upper surface, and handy flattened "mells" or pounding stones, told of the domestic occupation and the culinary art. Bones of sea birds, of seals, and some of the larger animals probably indicated an occasional change of diet, but there were no weapons large enough to determine whether these were secured by hunting or obtained by accident. Pit-fall traps for buffalo or buck there were in abundance in the neighbouring forest, but whether rightly or not, we were impelled to the opinion that they belonged to a different and later age and a different race—the "Hott'nots," the remains of whose encampments were so abundant on the "flats" above, whose whorl stones, perforated either to weight their digging sticks or for use as clubs, were found there in quantities, and whose rough pottery lay there in fragments, while one well-formed and even elegant jar with a rim has been found already, indicating a much higher stage of civilisation than there was any proof of in the caves. In them we found no whorl stones but only arrow or spear-heads—if, indeed, they were not merely forms of the prehistoric knife—and many "flakes" of varied shape and doubtless varied use.

I have said that the inner recess of the first cave described was not occupied, and this was true in a marked degree of every cave I visited; so much so, that the large caves in and near Rob Berg were so piled with great masses of shell *débris* at their mouth as almost, in some cases, to close the opening. One climbed up the rocks and then over a high ridge of shell—gaining access only by stooping—and passed down into the cave by a steep slope till one stood in a high and roomy chamber. Caves with a double opening were not uncommon on the coast, and from one of these I heard that seven skeletons had been removed.

A cave was not, however, the only residence of the "cave dwellers." An overhanging rock, giving the merest shelter, was often found to contain a mass of shells, and that, too, on steep and sloping ground; these, perchance, served as summer quarters. What is now the neck of Rob Berg also, which is marked by a huge and very conspicuous notch, was once a mighty cave. At first two caves back to back, it in time became and for ages remained a double-mouthed cavern and then an arch, the roof of which at last fell in. Great blocks of conglomerate can now be seen littering the space between the walls of rock, and the places from which they have fallen can easily be pointed out.

I regret that I have not been able to visit the caves farther along the coast, westward, towards Knysna Heads and beyond; but many exist there, and skeletons of the same race of men have been found in them.

No doubt the life of these strand loopers was nomadic, their wanderings governed, not by the pasturage available for their flocks—for flocks and herds they had none—but by the food supply accessible for themselves. This food, as we



STONE IMPLEMENTS OF FLAKED QUARTZITE, FROM THE KNYSNA CAVES, SOUTH AFRICA.
SCALE, $\frac{1}{2}$ NATURAL.



STONE IMPLEMENTS FROM THE NEIGHBOURHOOD OF KNYSNA, SOUTH AFRICA.
SCALE, $\frac{1}{5}$ NATURAL.

have seen, consisted mainly of the shell-fish on the rocks, and the amount obtainable within a given area was naturally not large and would obviously be but slowly replaced. The shore is rocky and narrow. The tide falls but little, and the waves are most frequently beating with great force upon the coast. They could at the best but snatch a precarious existence from the jaws of the jealous sea.

Then in time the growing strength of the Hottentot hordes on the hills above would be felt by the prowlers on the lonely shore, for parties would come down and raid the rocky terraces.

So would the fierce primeval tribe gradually grow less, till the skeleton we found crouched to the small and superficial hearth, the bones barely covered by the sand of the crumbling rock, perchance indeed, was that of the lone survivor of his race who had crept there, wounded, to die—the last of the strand loopers.

Description of Plate I.

Nos. 1-8. *Flaked* implements of local quartzite from the Knysna Caves.

„ 9-20. *Smoothed* implements of various local stones (not quartzite), found on or near the surface in the neighbourhood of Knysna; figured for contrast with the *flaked* implements from the caves.

Nos. 9-11. Pounders, formed by use from large round water-worn pebbles.

„ 12-14. Rubbers or grinders formed by use from longer water-worn pebbles.

„ 15-20. Series to illustrate stages in the manufacture of the perforated mace-like stones used as weights for digging-sticks.

No. 16. Showing preliminary chipping of the surface of a natural water-worn pebble, to give purchase to the borer.

„ 17. Boring has begun.

„ 18. Boring is carried further.

„ 19. Boring is carried through the stone on both sides; but the perforation is still hour-glass-shaped, and needs enlargement.

„ 20. The hole has been enlarged so that its walls are nearly parallel to each other.

NOTES ON THE GALLA OF WALEGA AND THE BERTAT.

BY REGINALD KOETTLITZ, M.D.

[PRESENTED FEBRUARY 13TH, 1900.]

THE route followed by Mr. Herbert Weld Blundell's expedition, of which I was a member, was briefly this:—We crossed the Gulf of Aden, from Aden to Berbera; thence, starting on December 6, 1898, we crossed Somali Land in a south-westerly direction as far as Jig-jigga on the Abyssinian frontier. This portion of our journey we performed with camels. Thence to Harar we travelled with mules. Avoiding the hot desert route we then proceeded along the ranges in the Arusi and Itu countries, and passed lakes Hanamaya and Chercher to the river Hawash, which we crossed, and thence ascended to Addis Abbaba, the capital of King Menelik. From this place I paid a flying visit to the holy mountain of Zikwala, some forty miles to the south.

Leaving Addis Abbaba we proceeded due west through the countries occupied by the Mecha and other Galla tribes; crossed the river Didesa into Walega, which we traversed in a northerly direction. Crossing the river Dabus we entered the country of the Berta or Nuer, where is Abd er Rahman's village called Beni Shongul by previous visitors. Finally we came to Famaka on the Blue Nile; following that river we reached Khartum and ultimately Cairo.¹

WALEGA.

The Galla of Walega are nearly as dark in complexion as the Itu in the east, and much more so than their kinsmen of Abyssinia. They are much less particular about their dress than are the Gallas in the east. The men often only wear a leather breech-cloth, or are content even with a goat-skin phallocrypt with the hair still upon the skin. The women often only wear the leather breech cloth. The girls, as elsewhere in Galla Land, arrange their hair in the shape of a mop, consisting of a mass of corkscrew ringlets. The married women stiffen this mop with wax and honey until it forms a coherent mass of rigid shape, with an edge like a honeycomb rising above it. Sometimes they dye their hair with red clay.

The tokuls outwardly resemble those of the Abyssinians, except that they are more squat and dome-shaped, with a stick protruding from the apex. The internal arrangement, however, is different. A partition made of sticks cuts off the space

¹ For a map of the route, see *Geographical Journal*, March, 1900.

near the door from the main body of the circular hut, thus forming a sort of vestibule. All household work is done within the inner compartment, and there also, along the wall, are the sleeping places, those of the unmarried men and girls being on opposite sides, and screened off by reed screens suspended from the roof and rising about 7 feet above the floor. The walls of these huts are made of grass thatch.

The hoe is the ordinary agricultural implement, but primitive ploughs, drawn by oxen, are occasionally to be seen.

Gold in small quantities is found in Walega, as also in Leka and Sibü, and is washed out of the sand of rivers and brooks. As the Gallas are required by their Abyssinian masters to pay their taxes in gold dust they are obliged to wash for it. I asked a man who had six dollars' worth of gold how long it had taken him to wash for this, and he told me seventeen days!

In these gold districts it is very common to see men carrying a wooden tray-like pan about 2 feet long and 15 to 18 inches wide. This pan is used for gold washing. A small goat-skin bag contains quills in which the gold is kept, and other apparatus. They carry also a neat native-made balance, with weights of pebbles or seeds, fitted into a small basket, by means of which they are able to ascertain fairly accurately the value of their washings. These quills filled with gold dust, or small packets of it, or gold rings of different weights, have a known value, and pass as currency throughout these districts, and there are some markets, notably that of Nago, which go by the name of "gold markets," and are frequented by merchants desirous of exchanging their commodities for gold dust.

THE BERTAS.¹

The Bertas inhabit the country to the north of the Dabus river² as well as a small tract to the south, within the Abyssinian border. They are true negroes, of a dark complexion, with markedly prognathous crania, thick protruding lips and broad flat noses. Most of them are under the average stature, have long arms and flat and spur-heeled feet. They are far from being a pure race, and there is no doubt a good deal of Arab strain among them.

Their chief, Abd ur Rahman, is an Arab, and resides at a village called Beni Shongul by previous visitors, but not known by this name in the country.

Our visit was ill-timed, for twice recently had the country been raided by the Abyssinians, once by Ras Makunen and again by Dejjä Demisi. The tokuls had been levelled, the crops destroyed by fire, and the live stock killed or driven off. Most of the inhabitants who had escaped death or capture had fled to remote parts of the country. Hence we were unable to obtain food, and obliged to lay in a stock before we entered the country.

¹ Berta is the singular, Bertat the plural. Shangalla is an Abyssinian designation applied to the Bertat and all other negro tribes.—Ed.

² Dabus seems to be the Galla name of this river. The Bertat call it *Yabus*, the Gamila *Dale*, and others *Dadhessa*, etc.—Ed.

We saw, however, enough of the people to convince us that the Bertas are lazy, careless, ignorant, stupid, impudent, fierce and vicious. By the Arab rulers we were treated well.

The dress of these negroes is of the simplest, consisting for the most part, and in the case of females as well as males, of a piece of leather or skin attached to a hip-belt and passed between the legs. Many, however, may be seen to wear the loose trousers, shirt and tope common in the Sudan.

Both sexes wear their hair short or shave the head, and they are much given to gashing their faces and arms, and also the trunk and occasionally even the legs. These gashes are made with a knife, when young, and the scars resulting from this operation stand out above the surface, salt and ashes having been rubbed into the wounds. Usually there are three long gashes in the face, running obliquely downwards and outwards across the cheeks, as also a number of smaller gashes, vertical and slightly curved, on a level with the eyes, towards the ears.

The marks on the arms consist of numerous small wedge-shaped gashes, arranged in rows, or broad arrow-heads, with transverse lines separating the rows, or zigzags, diagonal crosses and other fanciful designs. Gashes of the same kind cover the trunk and the lower extremities, and sometimes they cover nearly the whole body. Women even decorate their breasts with these fanciful designs. Occasionally a patch of small round spots, resembling vaccination or small-pox marks, covers the shoulders and other parts of the body.

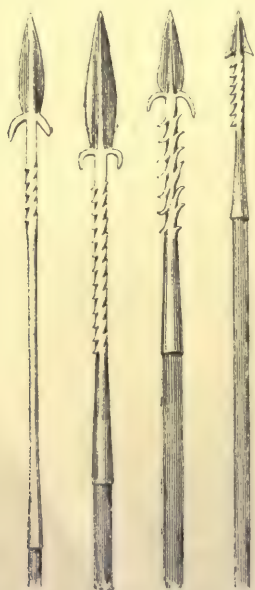


FIG. 1.—BERTA SPEARS.

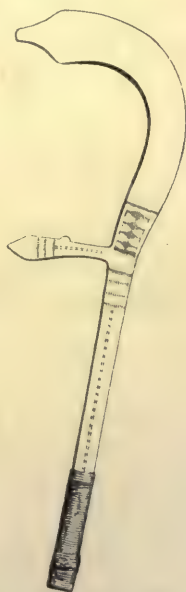


FIG. 2.—KULBEDAH.

The weapons of these people consist of a spear, sword, throwing stick and dagger. The spear has a long slender iron head, which ends in a comparatively small barbed arrow-headed point, the iron below which is jagged in a regular

pattern all round and as far as the socket by which it is attached to a bamboo shaft. This shaft ends in a ferrule with a chisel-shaped iron point. A spiral iron ring is attached one-third up the shaft, probably with the object of balancing the spear.

Many are also armed with the kulbedah, which resembles a curved double-edged sword with a spur on the inner side of the curve not far from the handle. This is an ugly and dangerous weapon, which is used as a sword and is also said to be thrown. A variety of this weapon, S-shaped, with a second spur, is met with occasionally. The straight iron handle of these swords is padded with leather, and often covered with crocodile or lizard skin.

The throwing stick or club is the weapon seen most frequently. It is curved and flat, and resembles a boomerang. It is made out of wood (sometimes of the root-end of a bamboo), and the patterns vary considerably. The men are very expert in its use and are able to knock down a bird in the water, fifty yards away or more. It does not, however, return to the thrower like the boomerang.

The tokuls are circular and resemble those of the Abyssinians and Gallas, except that the upper ends of the rafter sticks protrude about a foot through the thatch all round the centre pole. The floor is generally formed of a platform supported upon short poles and covered by the projecting roof. The walls are plastered with hard mud resembling mortar. In cases where the tokul does not



FIG. 3.—TOKUL.

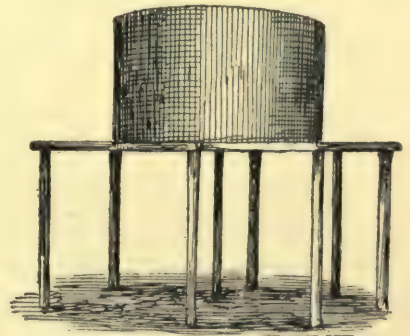


FIG. 4.—GRANARY.

stand upon a platform, the threshold of the door is raised a foot or 18 inches to prevent the hut being flooded during the rains.

The granaries, likewise, are raised upon a platform some 5 or 6 feet above the ground. They resemble cylindrical baskets.

We came past many fields enclosed within thorn hedges, but the only crops we noticed were dhurra and cabbages, all the rest having been destroyed.

They grind their corn on a disc-shaped stone (granite) about 18 inches or 2 feet in diameter, and slightly hollowed out upon the surface. The corn is ground or crushed with a smaller stone which is rubbed up and down, or round and round like a pestle in a mortar.

Large heaps of the empty shells of a big land mollusc were seen outside the tokuls. These had evidently been made use of as food, perhaps in consequence of the scarcity of more palatable food caused by the war.

Gold is washed in the Bertat country. The wooden trays used for the purpose are the same as those used by the Gallas, as are also the balances and quills.

The salt-blocks imported from Abyssinia constitute the favourite currency, more so than Maria Theresa dollars and Egyptian coins.

Donkeys are the only beasts used as pack animals and for riding, for owing to the Serut fly, ponies cannot be kept. The caravans of the merchants, however, are for the most part made up of human beasts of burden, male and female slaves being more numerous here, and cheaper than animals.

The following is the mean of a number of anthropological measurements which I was able to take:—

	Abyssinians.	Gallas.		Bertat.
	Males.	Males.	Females.	Males.
Age	26·7 years	27 years.	41·2 years.	27 years.
Stature	5 feet 5·4 ins.	5 feet 6·6 ins.	5 feet 3·3 ins.	5 feet 5·8 ins.
Length of upper extremity	22·3 ins.	22·33 ins.	21·3 ins.	23·08 ins.
Length between tips of fingers when arms are extended.	5 feet 8·65 ins.	—	—	5 feet 10·7 ins.
Chest girth	34·125 ins.	—	—	33·93 ins.
Head measurements:—				
Occipito-frontal	7·5 ins.	7·49 ins.	—	7·42 ins.
Occipito-mental	9·6 „	9·60 „	—	9·57 „
Bi-parietal	5·9 „	5·70 „	—	5·54 „

The bi-parietal diameter was measured 2 inches above and 0·77 inch behind the external auditory meatus in the case of the Abyssinians; 1·9 inches above and 0·39 inch behind in the case of the Galla, and 2·18 inches above and 0·77 inch behind in the case of the Bertat.

As a result, I found that the Galla are the tallest; the Bertas exceed in length of arm and fathom stretch; the Abyssinians in girth of chest; the occipito-frontal diameter is greatest among the Abyssinians; the occipito-mental among the Galla; and the bi-parietal among the Abyssinians.

DISCUSSION.

Mr. RAVENSTEIN said the expedition of which the author was a member had performed a most interesting journey, the results of which were most acceptable to geographers and anthropologists. Starting from Zeila, it had successfully traversed the countries of Mohammedan Somal and Gallas, of Christian Abyssinians and heathen Galla and Berta, and had ultimately come down the Blue Nile to Khartum. All these, however, were more or less border-districts, where neighbouring tribes had influenced each other, and primitive or primæval conditions could hardly be studied with advantage. He had long thought

that a well-formed expedition despatched into the heart of Galla-Land, might yield results of the very highest interest. We had learnt no doubt a great deal about the Gallas, but nearly all that information had come to us through missionaries, such as Leon des Avanchers, Massaja or Krapf, who had obtained their information in frontier lands, and whose preconceived notions hardly fitted them to present unbiassed reports on a heathen people. The information to be found in Tutschek's grammar showed these Galla to be simple atheists, whilst the curious bits of information collected by his friend, the Rev. Thomas Wakefield, made me anxious to obtain a fuller and a more precise knowledge of their circumstances. If this Institute were richer, or if one of its wealthy Fellows could be induced to come forward, he thought the money could not be spent better than by despatching an expedition into the country of the Bworani Galls, who seemed, as yet, not to have been contaminated by contact with Christians or Mohammedans. Such an expedition might now safely start from Kismayu, the tribes around which had been won over since the occupation of the coast by England. It would, of course, have to include several members, all of them well prepared for the task they undertook, and some of its members would have to be prepared to stay two or more years in the country, so that they might thoroughly learn the language and win the confidence of the people. An expedition like this, he thought, would furnish scientific results of the highest value, and in every department of science.

THE STONE CIRCLES OF SCOTLAND.

BY A. L. LEWIS, F.C.A., Treasurer of the Anthropological Institute.

[PRESENTED MARCH 13TH, 1900.]

FROM the times of Aubrey and Stukeley to the present day the tendency, whether intentional or unconscious, of almost all writers upon stone circles has been to dwell upon their points of resemblance and to minimise the differences which exist between them, and, consequently, to suggest a uniformity of origin, date, and purpose, which is perhaps less probable than has been supposed. Even when differences have been recognised there has not been, so far as I know, any attempt made to classify or localise them; such an attempt I now propose to make. Thirteen years ago I was able, as the result of a visit to the district round Aberdeen, to show (in a paper read before this Institute on the 8th March, 1887, and printed in the *Journal* of August of that year), that most of the circles there had special features, which were not to be found in any other locality, and to which I will presently refer more fully. On this occasion I hope, as the result of a more extensive tour made last autumn, to show that the circles in other parts of Scotland have peculiarities which distinguish them both from the circles round Aberdeen and from those of England and Wales, and which, even in Scotland itself, are confined to special localities.

Stone circles are still much more plentiful in certain parts of Scotland than in the rest of Britain, but many that formerly existed have been destroyed, and for the most part without any satisfactory description of them having been preserved.

Sir James Young Simpson, as long ago as 1861, said, "Almost all the primæval stone circles and cromlechs which existed in the middle and southern districts of Scotland have been cast down and removed. . . . In the beginning of the eighteenth century Sir Robert Sibbald states that near the Kipps cromlech was a circle of stones with a large stone or two in the middle, and, he adds, 'many such may be seen all over the country.' They have all disappeared, and but lately the stones of the Kipps circle have been themselves removed and broken up, to build, apparently, some neighbouring field walls, though there was abundance of stones in the vicinity equally well suited for the purpose."¹

Notwithstanding this lamentable destruction, there are still so many circles left that I have been unable to visit the greater part of them, but I have been able to supplement my own observations from many excellent and evidently trust-

¹ Anniversary address to the Society of Antiquaries of Scotland, January, 1861. (*Proceedings*, vol. iv, p. 48.)

worthy accounts contained in the *Proceedings of the Society of Antiquaries of Scotland*, and other publications, and propose, with the aid of the lantern, to take you on what I may call a "circular" tour round the coast of Scotland, beginning at the extreme south-west.

In the counties of Wigtown, Kirkcudbright, and Dumfries there are still several circles, some of which are more than 100 feet in diameter, and which consist of rather irregular single rings, formed partly of shapeless boulders, and partly of more pillar-like stones, which are seldom more than 5 feet high. Many circles of apparently similar construction are also spoken of in Perthshire, and some in Argyll and Sutherland, but none of these of which I have seen any account can be compared for size or grandeur to the larger English circles, or for regularity and beauty to the smaller circles of Cornwall and Devon.¹

In the island of Arran, in the estuary of the Clyde, close to the road, and about half-way between Brodick and Lamlash, is a circle, which is, I think, very much like those I have been speaking of, but much smaller, being only 21 feet in diameter; it now consists of three granite blocks and some fragments; 63 feet from its circumference is a stone 4 feet high, of coarse conglomerate, in a direction 35° east of south, and, as this stone is just seven radii of the circle from its centre, it may have been specially connected with it. Dr. Bryce dug into this circle in 1861, and found in the centre a small kist, or rather a hole cut in the underlying sandstone, which contained black earth and fragments of bone, while in the stony soil above he found a flint implement and three other flint fragments; he dug on both sides of the outlying stone, but found nothing. Twelve miles away, on the other side of the island, is a more important group, which I was unable to visit, but concerning which Dr. Bryce has given full particulars.² There were in 1360 the remains of eight circles very near to each other, varying in diameter from 7 to 21 yards, five being of sandstone and three of granite, the largest stone being 18 feet high. One of these was a double concentric circle, and four of them contained kists, all pointing a little east of north, with hand-made urns, rude flint arrow-heads, and fragments of bone, with black earth, which, however, was not formed from animal substance. In one kist there was a skull with some long bones, and in another a piece of a bronze pin; in the other circles nothing was found, but, with one exception, it would not be safe to say that no burial had ever existed in them, yet the one exception may be taken to show that burial was not the universal primary object. Dr. Bryce remarks casually, "The granite peaks of the Goatfell group were defined against the deep azure of the north-eastern sky with wondrous distinctness," a circumstance to which I have

¹ (Miss) C. Maclagan, *Hill Forts, Stone Circles, etc., of Scotland*, 1875. *Proc. Soc. Antiq. Scot.*:—Vol. xxix (1895), p. 301, "Stone Circles of the Stewartry of Kirkcudbright," by F. R. Coles; vol. xxxi (1897), p. 281, "On the 'Girdlestanes,' etc., Dumfriesshire," by D. Christison M.D.; p. 90, "Notes on a Stone Circle in Wigtownshire," by F. R. Coles; *Proc. Soc. Antiq. Lond.*, 1885, vol. x, p. 303 (Rev. W. C. Lukis).

² *Proc. Soc. Antiq. Scot.*, vol. iv, p. 499, "An Account of Excavations within the Stone Circles of Arran," by James Bryce, M.A., LL.D., etc.

had occasion to draw your attention in connection with other circles. Goatfell, I may mention, is 2,866 feet above sea level. Dr. Bryce says that the nearest deposits of flint are in Antrim.

There are three fine standing stones at the entrance to Glen Rosa, on the north side of Brodick, and there is another 10 feet high by the side of the road on the way to them. Dr. Bryce also says that several stone circles were known to have existed in other parts of Arran, but that in 1860 there were none remaining but those I have mentioned.

It can hardly be doubted that there have been, even if there are not still, circles in some of the other islands off this coast, but the only two which I have found mentioned were:—One at Kirkabost, Strathaird, Skye, which, it is said, originally consisted of large upright stones, very few of which remained in 1863¹; and one about ten miles from Rothesay (Bute), near Kingarth.² In what the inhabitants of these islands sometimes describe as the adjacent island of Great Britain, there are said to have been, not far from the Crinan canal, cairns, some with kists and some with chambers, but both with circular retaining walls; and on the moors and throughout the hills, several small circles of stones containing burials, but not kists.³ Near Taradin or Tardain, also, I think, in Argyllshire, Mr. Logan, in 1832, reported the existence of a circle of large stones with a covered way leading into it; this was probably the remains of a chambered cairn with a retaining wall,⁴ and not what is understood by a circle.

Proceeding northward, we arrive at the island of Lewis, on the west side of which there is a very interesting collection of circles. The first we come to from Stornoway, after a journey of fourteen miles along a road bordered principally by peat and puddle, with hills in the background, is a concentric double oval. The outer ring now consists of eleven stones, and its diameters are about 50 and 40 feet; the inner ring has only four stones remaining, and its diameters are about 27 and 20 feet. The tallest stone, which forms part of the inner ring, is 6 feet high. This circle is not marked on the one-inch ordnance map, and I have not found any record of excavation being made or anything found in it.

About half a mile farther across the moor may be seen the remains of another oval, of which five stones, of about the same size as those just mentioned, are standing, and three are fallen; both these rings were formerly almost buried in peat, on removing which, in 1858, there were found in this one a small cairn or heap of stones, and four little holes dug in the ground, surrounded by stone borders and paved with smooth round sea-shore pebbles brought from some distance, and in these holes bones and charcoal were found.⁵

¹ *Proc. Soc. Antiq. Scot.*, vol. v, p. 14.

² Nelson's *Tourists' Guide to the River Clyde*.

³ *Journal of the Ethnological Society*, vol. ii, New Series, p. 146, Rev. J. R. Mapleton on "Prehistoric Remains in Neighbourhood of Crinan Canal." Dr. Munro, *Prehistoric Scotland*, 1899, p. 285.

⁴ *Archæologia*, vol. xxv, p. 614.

⁵ *Proc. Soc. Antiq. Scot.*, vol. iii, p. 203, 16th February, 1859, Right Hon. Edward

Two other circles are marked on the ordnance map, from one to two miles south from these, and another on Great Bernera, about four miles west across an inlet of the sea, but I was unable to visit any of these, and have no information about them except a vague statement that they are like the others.

The monuments which I have described so far, with the exception of a few in Argyllshire, are all of one sort, consisting of single or double open rings of stones, both circles and stones generally of moderate size, and usually having burials of some sort in the enclosed area, though, as some have no traces of interment, that would seem not to have been their only purpose. This kind of circle, which extends also into Perthshire, I propose to call the "Western Scottish type."

The chief object of pilgrimage in the island of Lewis is, however, the Callernish circle which is about a mile beyond the two I first mentioned, and plainly visible from them. Various plans and measurements have been given of this circle and its unique appendages, but the best are those by Sir Henry James.¹ The circle consists of thirteen stones, from 12 to 15 feet high, with one in the centre, 17 feet high; they are from 3 to 5 feet in width, but not more than 1 foot thick, and these proportions and their number and proximity to each other produce a rather bewildering effect when close to them. A line of five stones standing and some fallen extends southward from the circle, and lines of four stones from its east and west sides respectively, while from the north-north-east two lines, one of nine and the other of ten stones, form a sort of avenue, from which, however, there is no special entrance into the circle; there are two other stones outside the circle, one on each side of the south line. Inside, occupying all the space between the central stone and the east side of the ring, is a slight tumulus, with three cells, forming a sort of cruciform sepulchre, about 10 feet long and 2 feet deep; it is most probable that this is quite a secondary structure, though it may, notwithstanding its shape, have been made some time before the introduction of Christianity, yet long after the rest of the circle. All these stones were buried in a growth of 5 or 6 feet of peat, which was cleared away in 1857-8, but the protection afforded by it from weathering and lichen is still clearly visible on all the stones. Minute fragments of human bone, apparently burnt, and a black unctuous substance were found in the cruciform tomb when the peat was cleared away from it.² Mr. Callender has said with regard to this circle, "That its position was chosen and laid down from astronomical observation can easily be demonstrated by visiting the spot on a clear night, when it will be found that, by bringing the upper part of the single line of stones extending to the south to bear

Ellice, M.P. *Archæologia Scotica*, vol. i, p. 283 (published 1792), Colin McKenzie on "Antiquities in Lewis."

¹ *Plans and Photographs of Stonehenge and of Turusuchan in the Island of Lewis, etc., etc.*, by Col. Sir Henry James, R.E., F.R.S., etc., Director-General of the Ordnance Survey, 1867, 4to. (Ordnance Survey, price 14s. 6d.) Dr. T. A. Wise published some plans and remarks on this and some other monuments in the *Journal of the British Archaeological Association* in 1877 (vol. xxxiii, p. 158), but they abound in errors.

² Sir J. Matheson in the *Proc. Soc. Antiq. Scot.*, 12th April, 1858, vol. iii, p. 111.

upon the top of the large stone in the centre of the circle, the apex of that stone coincides exactly with the pole-star. This is more readily done from the south line, being on sloping ground, so that looking along the line upwards to the higher level of the centre stone is very much the same as taking an observation through the incline of a telescope."¹ The bearing of that line is, according to Sir H. James's plan, about 3° east of north; the northern and longest lines are not, however, quite in the same direction, being about 10° and 15° east of north from the centre; these directions, 10° and 15° east of north, are specially marked in some of the Cornish circles by prominent hilltops.²

According to Sir Henry James's plan, the inside diameters of the circle are 42 feet from north to south, and 36 feet from east to west; the greatest length of the whole structure from north to south is 408 feet, and the extreme width from east to west is 130 feet. From the centre of the circle to the end of the northern line is 294 feet. It does not appear to have occurred to Sir Henry James or to anyone else, but it is nevertheless the fact, that 294 is exactly seven times 42, so that from the centre of the circle to the end of the avenue is exactly seven of the long diameters of the circle. The northern lines of stones are both irregular in their spacing, and the stones in the lines are not opposite to each other. Mr. Callender points out, with regard to the double row, that although "it has the appearance of an avenue it does not seem to have been intended to serve as a mode of access to the circle. If such had been the case the upright stones in front would naturally have been omitted, whereas they stand facing the approach without any deviation from the regular order." Sir Henry James says, "The row of stones on the east side of those which form the shaft of the cross is so arranged as to form an avenue leading up to the grave." This row starts from a stone outside the circle 48° north of east, which is about the midsummer sun rising point, and I am inclined to think that this and the stone at the other end of this line are in their original positions, but that the other stones between these two, which are all rather small, were set up later, and were perhaps removed from the other line, which they would just about suffice to complete. It seems likely, then, that this monument was first constructed in the form of a cross, with a circle at the intersection, and with a single line of stones for each limb, for practices of which the observation of the pole-star and of the sun formed a prominent part; that after a time a tomb was constructed in the interior of the circle, and some of the stones from the northern arm of the cross were removed to make a second line, forming with the first an avenue to the tomb; and that, after a further interval of time, the place was so entirely deserted that no less than 5 feet of peat grew up over the tomb and around the stones. This circle, like many of those in England, has direct reference to the sun and stars and proportional measurements, and belongs, therefore, like them, to a class which I will call "sun and star circles."

¹ H. Callender in the *Proc. Soc. Antiq. Scot.*, 9th March, 1857, vol. ii, p. 380.

² "Stone Circles of Britain," by A. L. Lewis, in *Archæological Journal*, vol. xlix, p. 136 (1892).

The inhabitants are said to have no traditions now about these circles, but Martin, writing about 1700, said the natives told him that the circle last described was a place of worship in the time of heathenism, and that the chief druid or priest stood near the big stone in the centre, from whence he addressed himself to the surrounding people. This could hardly have been learnt from Aubrey, to whom the origin of the "druidic" theory is sometimes attributed, and Sir Henry James points out that "the preservation of such names as 'Clach an Druidean' (the Stone of the Druids) in this island would seem to prove their presence in it at some possibly not very remote period of our history."

Proceeding on our journey round the coast, we arrive at Stenness in Orkney, landing either at Stromness, which is five miles from it to the west, or at Kirkwall, which is ten miles from it to the east. Here, on a wind-swept peninsula, between the Lochs of Harray and Stenness, is the circle known as the Ring of Brogar. The best plans and description of this and the adjacent stones are those of Lieutenant Thomas, R.N., published in *Archæologia* (vol. xxxiv, pp. 88–136, 1851), and I am happy to say that there seems to be little if any alteration in these remains since his survey, made in 1848.

Passing a ditch, 29 feet wide and 6 feet deep, by one of the two causeways which exist, we stand on a circular plateau, 366 feet in diameter, upon which are the remains of a single circle, 340 feet in diameter, of large stones, which, according to Lieutenant Thomas, whose figures I am quoting, were originally sixty in number.¹ Thirteen of these, from 6 to 14 feet high, are still standing, eleven, of similar dimensions, are lying flat, and twelve are represented by stumps and fragments, leaving twenty-four vacant places. Across the Loch of Harray three hills of no great elevation may be seen, between 35° and 65° north of east, covering the midsummer sun rising point, as in many circles in England and as at Callernish also, and answering to the old Egyptian "mount of glory, where the sun rises and is saluted by the powers of the east."²

Looking from the centre of the circle in the direction of the bridge of Brogar, about 30° south of east, we see a large stone by the bridge, called the "Watchstone," which is 18 feet high, and over and beyond it in a direct line another, called the "Barnstone," 15 feet high. A little to the left of this line are two standing stones, which do not seem to have any connection with the others; and a little to the right of it, but beyond the bridge and the "Watchstone," are two standing stones, 15 and 17 feet high, and one fallen, 19 feet long; these and a stump are all that remain of the Ring of Stenness, which Lieutenant Thomas thought originally consisted (if, indeed, it were ever complete) of twelve stones, in a circle 104 feet in diameter, standing on a low mound, encircled by a trench and slight embankment.³ In addition to these three stones there are upon the mound the

¹ Mr. Spence thinks 52 only.

² *Book of the Dead*, see *Proceedings of Society of Biblical Archæology*, vol. xviii, p. 8, and vol. xix, p. 145. Sir P. Le Page Renouf (President) on the *Book of the Dead*.

³ Lieutenant Thomas considered that this mound, 162 feet in diameter, had been raised about 3 feet above the natural surface and encircled at a distance of 36 feet by a bank 3 feet high

capstone and two supporting stones of a dolmen, which, I think, may very likely have been made out of what was once a stone forming part of the circle, for their present position does not seem to be either a usual or a likely one as part of the original scheme. Somewhere on the north side of this circle was the celebrated holed stone called the Stone of Odin, which was destroyed at the beginning of the nineteenth century. Lieutenant Thomas was told by someone who had known it in his childhood that it was on the north-west of the circle, but Dr. Henry, writing to the Society of Antiquaries of Scotland, in 1784, when it was still standing, says positively it was to the north-east. It seems probable, therefore, that this circle was quite independent of the larger Ring of Brogar, and had the Odin Stone as an outlyer to the north-east, like the stone called the "Friar's Heel" at Stonehenge and others elsewhere.¹ Leaving the Stenness circles, we go in the direction of the road from Kirkwall to Stromness, close to which we find the "Barnstone" before mentioned, and again verify the fact that a line from it to the "Watchstone" will, if prolonged, strike the centre of the Brogar circle. We then proceed north-easterly to the celebrated chambered tumulus of Maeshowe, and sitting down at the further end of the chamber and looking down the long passage to the outside see the "Barnstone," and find that it is in a direct line down the passage. Mr. Magnus Spence,² who, as I understand, first drew attention to these alignments, has, by personal observation, found that the line from the "Barnstone" to the centre of Maeshowe is that of the midsummer sunrise. This raises the question whether Maeshowe were always a closed tomb, or whether it may not have been a sanctuary of some kind, or a dwelling for the priests.³

and 36 feet wide at the base, the bottom of the apparent trench being, in fact, the natural surface. Mr. Spence thinks there may have been thirteen stones in this circle.

¹ Dr. Henry's communication was not printed at the time, but is quoted by Dr. Hibbert in his paper on "The Tongs of Orkney and Shetland" in vol. iii of *Archæologia Scotica*.

² *Standing Stones and Maeshowe of Stenness*, by Magnus Spence (Gardner, Paisley and London).

³ The three most notable chambered tumuli in Europe are at Gavv Inis in Brittany, New Grange in Ireland, and Maeshowe in Orkney, and as I have been in all of them, I may perhaps be allowed briefly to compare them. The gallery and chamber at Gavv Inis are of what may be called the ordinary type, upright slabs forming the walls, and horizontal slabs the floor and roof; its chief distinction is the incised markings with which it is so profusely ornamented. The New Grange monument has an irregularly shaped gallery and chamber, the lower part of the walls of which are of upright stones, while the roof is formed by courses of stones projecting inwards till they meet, and there are three recesses, one on each of three sides of the chamber, which, with the entrance gallery on the fourth side, give it a cruciform plan; there are also concentric and other ornamental patterns inscribed on some of the stones. At Maeshowe there is a long gallery opening into a chamber of an almost square shape, which also has three recesses, making with the gallery an apparent cross, but the walls are all of horizontal courses, except a large upright at each corner of the chamber, and while the roof of the chamber is as it were domed by diminishing courses like that of New Grange, the roof of the gallery is made of flat slabs like that at Gavv Inis. The recesses are different from those of New Grange, and much more resemble the sleeping places made in the thickness of the walls of some of the beehive houses in the island of Lewis (Lieutenant Harris, R.N., in *Proc. Soc. Antiq. Scot.*, 12th May, 1858, vol. iii, p. 297), except that they would be much more convenient dormitories. A very

According to Mr. Spence, the distances between Maeshowe and the Brogar circle and its outlying stones are carefully proportioned, and the lines between them are all of astronomical import, thus :—

From Maeshowe to the “Barnhouse” stone or “Barnstone” is 42 or 43 chains, in the line of the setting sun ten days before the winter solstice.

From the “Barnhouse” stone to the “Watchstone” is also 42 chains, or according to the 25-inch ordnance map 43 chains, and from the “Watchstone” to the Brogar circle is 63 chains farther in the same line, which is that of the setting sun at the Beltane festival in May, or, looking from the circle to the “Barnstone,” that of the rising sun ten days before the winter solstice, when, as Mr. Spence thinks, the winter feast may have begun.

From Maeshowe to the “Watchstone” is also 63 chains, in the line of the equinoctial sun rising and settings.

With regard to these allignments, I can in a very great measure confirm Mr. Spence’s statements from my own observation, but the measurements were far too long for me to attempt to verify ; we may, however, safely place the Brogar circle, as well as the Callernish monument, in the list of “sun and star circles.”

I should mention that there are several tumuli round about the ring of Brogar, in which burials have been found, but that none have been found within the circles. There is also to the north-west of the Ring of Brogar an earthen ring, without standing stones, called the Ring of Bukan.

Leaving Stenness, we go down the east coast of Scotland as far as Inverness, where we find ourselves in the midst of a number of circles of quite a different type from any we have yet seen. Perhaps the greatest assemblage of these was at Clava, on the banks of the Nairn, seven miles from Inverness, and one mile past the battlefield of Culloden. Half a century ago there were here, according to Mr. Cosmo Innes (*Proc. Soc. Antiq. Scot.*, 18th January, 1858, vol. iii, p. 46), eight cairns, each surrounded by a circle of large stones, besides many smaller remains ; since that time there have been much building and cultivation, attended by the usual results. On crossing the river from Culloden, the first stone seen is one of considerable size, standing alone in a field, and said to be the last survivor of a circle and cairn. Following the road, we soon find ourselves in the midst of a

similar arrangement of three chambers opening from a central one is described by Captain Thomas R.N. (*Proc. Soc. Antiq. Scot.*, 16th March, 1859, vol. iii, p. 225), as existing in a beehive house in the island of St. Kilda, which was inhabited at least as lately as the summer of 1697. There is no record of any interment having been found in Maeshowe, and there is no reason why it might not have been—at all events in the first place—a beehive dwelling of comparatively palatial dimensions, even if it were (of which there is no evidence) converted into a tomb at a later period. The only ornamentations on the walls are a number of runic inscriptions, and a little figure of a dragon cut by Scandinavians, who knew no more about the origin of the structure than we do. Another difference between New Grange and Maeshowe is that the former was surrounded by a retaining wall of uncemented masonry, outside which is an earthen bank 5 or 6 feet high, outside which, again, was a circle of upright stones, of which the largest remaining is about 7 feet high. Neither at Maeshowe nor at Gavr Inis are there any traces of adjuncts of this kind.

circle, through which it runs, and which is one of a group of three, the principal, if not the only, remains now to be found. This circle is a little over 100 feet in diameter, and consisted of twelve stones, from 4 to 7 feet high, the highest being at the south-west; in the middle of this circle is another, about 50 feet in diameter, of small blocks, 2 or 3 feet high and broad, close together, which formed a retaining wall for a cairn of large loose stones. From this wall, nearly opposite

FIG. 1.

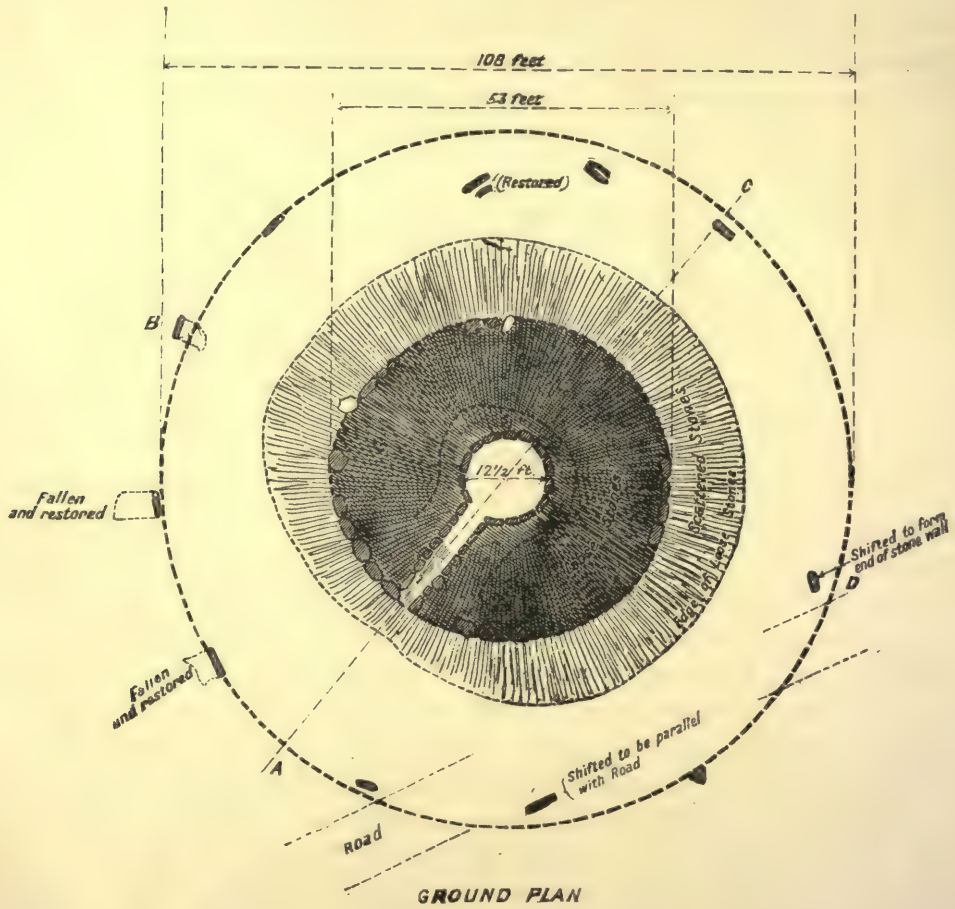


FIG. 2.



Ground-plan (fig. 1) and section (fig. 2) of South-west Cairn and Circle, Clava, lent by the Society of Antiquaries of Scotland from the illustrations to Mr. Fraser's "Descriptive Notes on the Stone Circles of Strathnairn and the Neighbourhood of Inverness."

the highest stone of the outer circle, a passage leads inwards to another close circle $12\frac{1}{2}$ feet in diameter, which is in fact the lower part of a chamber, formerly domed and covered with the loose stones which have fallen or been thrown down in a confused heap, in which the second circle or retaining wall is nearly buried.

These circles are surrounded by a mass of furze, which may conceal many fallen stones and smaller remains, but the interior of the circles is kept clear, and a path cut through the furze leads to another group in a north-easterly direction. Mr. Jolly,¹ writing in 1882, said it consisted of an inner chamber, 20 feet in diameter; a retaining wall for the cairn, 50 feet in diameter; and a surrounding circle, 100 feet in diameter, of eleven stones. Of these latter I found only six, which are from 4 to 8 feet high, the highest being at the south-west, as in the first circle described, but others may be fallen and covered by the furze. Even in 1882 the two inner circles had almost gone, and last year I only found a shapeless heap of stones where they had been. Mr. Fraser,² writing in 1884, found no trace of a passage or of a wall rising from the inner circle, and as the diameter Mr. Jolly assigned to that circle is unusually large for a chamber, the chamber, if there were one, may have been a smaller construction inside it and destroyed long ago.

Following the path still farther to the north-east, we come to the third of these circles, which is almost identical in size and pattern with the first, there being now ten stones in the outer circle, from 3 to 9 feet high, of which the highest is, as in the other cases, at the south-west, nearly opposite the passage leading from the second circle or outer wall of the cairn to the inner circle or chamber, the walls of which latter are still 7 or 8 feet high. In one of these chambers, but whether on or under its floor I do not know, as accounts seem to differ, two small urns with calcined bones were found early in the nineteenth century.

Some of the stones of the outer circles at Clava have fallen and been re-erected, not always exactly in their original position. Cup-markings have been found on one or two stones of each set of circles.

One of the best circles near Inverness is that of Inches, or Leys, two or three miles up the old Edinburgh road. There are the remains of three concentric circles and a passage, which few who have previously seen the Clava group could doubt were also part of a chamber, cairn, and outer circle. All the small stones which formed the cairn and the upper part of the chamber and most of even the larger lower stones of the latter are gone; but the intermediate ring which formed the retaining wall of the cairn and the outer circle are almost complete, and the lower stones of the passage are nearly all there. The diameters of the circles are about a fifth less than those of the Clava group, but the stones of the

¹ On "Cup-marked Stones in the Neighbourhood of Inverness" in *Proc. Soc. Antiq. Scot.*, vol. xvi, p. 303.

² "Descriptive Notes on the Stone Circles of Strathmairn and Neighbourhood of Inverness," by James Fraser, C.E., *Proc. Soc. Antiq. Scot.*, vol. xviii, p. 341.

outer ring are, if anything, a trifle larger, and the largest, as at Clava, is at the south-west, nearly opposite the opening of the passage. A gold torque, which was found either in or near these circles, was exhibited to the Society of Antiquaries of Scotland in 1824.

FIG. 3.

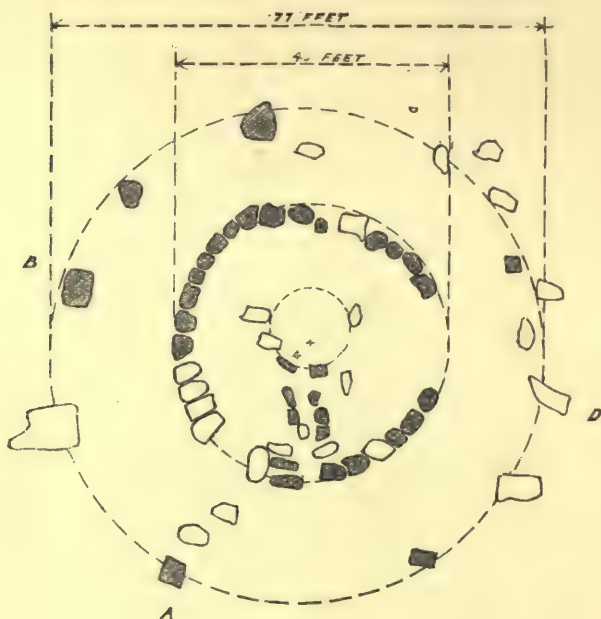
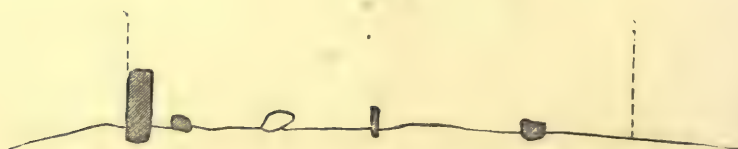


FIG. 4



Ground-plan (fig. 3) and section (fig. 4) of Leys Circle, near Inverness, lent by the Society of Antiquaries of Scotland from the illustrations to Mr. Fraser's "Descriptive Notes on the Stone Circles of Strathnairn and the Neighbourhood of Inverness."

I have a list, compiled from various sources,¹ of more than forty circles round about Inverness, but of a dozen or more of them little or nothing is left to show their original plan, and others are too imperfect to say much about. Nine, at least,

¹ *Proc. Soc. Antiq. Scot.* :—Vol. iii, p. 46, Cosmo Innes on "Stone Circles of Clava, etc.," 18th January, 1858; vol. xvi, p. 314, W. Jolly on "Stones with Cup-markings near Inverness"; vol. xvi, p. 477, Angus J. Beaton on "Antiquities of Black Isle, Ross-shire"; vol. xviii, p. 328, J. Fraser, M.I.C.E., "Descriptive Notes on the Stone Circles of Strathnairn and Neighbourhood of Inverness."

Archeologia Scotica :—Vol. iii, p. 211, G. Anderson on "Circles and Cairns near Inverness"; Rev. C. L. Smith, M.A., "Excursions through the Highlands and Isles of Scotland in 1835 and 1836." M. Pocard Kerviler in *Journal de la Société Polymathique*, 1869.

See list of circles at end of paper.

were evidently of the construction I have described, and at least as many others show traces of three concentric rings but have no certain indication of any passages. It is clear that we have in the district of which Inverness is the centre a number of circles of a special kind, consisting of an outer ring of pillar stones encircling a cairn with an interior chamber and passage leading to it, or it may have been in some cases a small chamber or kist without a passage, and this kind of circle I propose to call the Inverness type. In these circles the largest pillar stone is usually at or about the south-west, and the entrance to the passage, when there is one, is between south and south-west.

Although these circles were most numerous in the neighbourhood of Inverness, there seem to have been two or three in Caithness, where, however, the majority of burials appear not to have been in circles at all.¹ One is mentioned in the Orkneys, but as it was covered by a lake, it may very likely have been the remains of a crannoge.² Another is described as standing at the east end of Quendale Bay, Shetland,³ but this has not, and perhaps never had, an outer ring of pillar stones, and the same may apparently be said of some already mentioned in Argyllshire; these may therefore be only remains of chambered cairns without surrounding circles. There may perhaps be one or two in Perthshire, but all that are situated outside the Inverness district are more or less accessible from it by water. A circle at Gunnerkeld in Westmorland is the only one in England that bears any resemblance to the Inverness type⁴ and even this presents many differences.









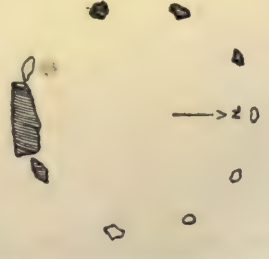



Continuing our journey round the coast, we arrive at Aberdeen, where, as I mentioned at the commencement of this paper, we are in the midst of a group of circles of yet another description, which I propose to call the Aberdeen type. They resemble the Inverness circles in having an outer ring of pillar stones encircling in most cases—not a large cairn with a built-up chamber but a kist, covered by a low mound, which is frequently supported by a retaining wall of small stones forming an inner circle, but of course without any passage leading to the interior. The distinguishing feature of the Aberdeen type is, however, what is locally called the “altar-stone,” although it was not and never could have been an altar, a large stone standing on its longest edge between the two tallest pillars of the outer circle, filling up the whole space between them, and frequently kept in position by two small stones in front and two behind it. It is generally at the south of the outer circle, or slightly east of south, the highest stones being next to it, and the others gradually diminishing in size to the north. There are circles of other kinds in the country round Aberdeen—as for instance at Fordoun,

¹ *Proc. Soc. Antiq. Scot.*, vol. vii, p. 293, Rhind on “Yarhouse, Wick, etc.”

² *Proc. Soc. Antiq. Scot.*, vol. xvi, p. 477, A. J. Beaton, “Antiquities of Black Isle Ross-shire,” 14 June, 1882.

³ *Ibid.*, vol. xxi, p. 283, Rev. C. L. Acland, M.A., 9 May, 1887.

⁴ *Journal of British Archaeological Association*, C. W. Dymond, C.E., 5th March, 1879. *Journ. Anthropol. Inst.*, vol. xv, p. 165, A. L. Lewis, 28th April, 1885.

			
STRICHEN. (Rev. J. Peter)	MIDMAR. (Col. Forbes Leslie)	ARDLAIR. (Col. Forbes Leslie)	SINHINNY. (Col. Forbes Leslie)
			
LOUDON WOOD. (Rev. J. Peter)	"KIRK O' TOUGH." (C. MacLagan)	"KIRK O' KEIG." (C. MacLagan)	AUQUORTHIES. (C. MacLagan.) INVERURY.
			
AIKEY BRAE. (Rev. J. Peter)	AUQUORTHIES. (A. L. Lewis.) ABERDEEN.	DYCE. (A. L. Lewis)	OLD RAYNE. (C. MacLagan.)
SKETCHES AND PLANS OF "ALTAR STONES" IN SCOTCH CIRCLES. (ABERDEEN DISTRICT.)			

and at Broomend of Crichtie—but all inquiries that I have made have failed to discover a circle of this type anywhere except in this district.

I have a list of more than thirty circles in the Aberdeen district, but I think there may have been many more.¹ Twenty-six have this peculiar "altar-stone," and some of the others may have had it, but are too imperfect to enable anyone to say whether it formerly existed in them or not. I think, therefore, I may now say that I have fully established the proposition with which I began this paper, that the Scotch circles may be divided into different types, each of which has its centre in a different locality, namely:—1. The Western Scottish type, consisting of a rather irregular single ring or sometimes of two concentric rings. 2. The Inverness type, consisting of a more regular ring of better-shaped stones, surrounding a tumulus with a retaining wall, containing a built-up chamber and passage leading to it, or a kist without a passage. 3. The Aberdeen type, consisting of a similar ring with the addition of a so-called "altar-stone," and usually having traces of a tumulus and kist in the middle. There is much reason to believe that most of the circles of these three types were used for burial, if, indeed, that were not their chief purpose, but, as there is evidence that all have not been so used, it cannot have been their only purpose; and, with regard to the Aberdeen circles in particular, we have the statement of Dr. Garden, made to Aubrey so long ago as 1692, that "the general tradition throughout this kingdom concerning this kind of monuments is that they were places of worship and sacrifice in heathen times."² In addition to these three types of circles, there are what I have ventured to call the sun and star circles, with their alignments of stones, and apparently proportioned measurements; and other classes may perhaps yet be distinguished by a closer examination in different parts of the country.

This division of the circles into classes and localities is, it appears to me, an important point for consideration in any attempt to unravel the early history of the Scottish people. From Inverness to Aberdeen is only about 70 miles in a straight line, and the distance between the points nearest to one another of the districts of which they are the centres is much less, but there must either have been a separate tribal origin or a considerable cessation of intercourse between two branches of the same tribe for two such different types of circles to

¹ Colonel Forbes Leslie, *Early Races of Scotland. Archaeologia Scotica*, vol. ii, p. 324, J. Skene, "Account of Hill-Fort of Barmekyne, etc." (1822).

Proc. Soc. Antiq. Scot.:—Vol. i, p. 141 (14th February, 1853), John Stuart on "Various Stone Circles in Aberdeenshire"; vol. xiv, p. 295 (1879), Dr. Angus Smith on "Stone Circles in Durris, Kincardineshire"; vol. v, p. 130 (1863), A. Thomson on "Four Circles of Standing Stones in Parish of Banchory Devenick"; vol. xviii, p. 319 (1884), C. E. Dalrymple on "Stone Circle at Crichtie"; vol. xix, p. 370 (1885), Rev. J. Peter on "Stone Circles in Parish of Old Deer"; vol. ii, p. 466 (1857), A. Jervise on "Sculptured Stone monuments, etc., at Fordoun, Mearns, etc." *Archæologia*, vol. xxii, p. 198 (1827), J. Logan on "Several Circles of Stones in Scotland, etc."; p. 410 (Appendix, 1822), J. Logan on "Circles at Dyce and Leuchars." *Proc. Soc. Antiq. Lond.*, May, 1885, vol. x, p. 305 (Rev. W. C. Lukis).

² *Archæologia*, vol. i, p. 312.

have been developed in localities so near to one another. The apparent existence of some specimens of the Inverness type outside its immediate district, but in communication with it by water, suggests also that the greater facilities offered by the inland lakes for the use of slight and fragile vessels may have developed a seafaring capacity among the early men round Inverness, which was not so readily acquired in the rougher and more open seas on the Aberdeen coast.

So far as Dr. Beddoe's statistics go, the Inverness people of a generation ago seemed to be somewhat taller and heavier than those of Aberdeen, but he does not appear to draw any particular distinction between them.¹ He says, however (p. 540), "I believe it would accord with what has been observed in other mountainous and sequestered regions, such as Switzerland and Styria, if there were considerable variations in average stature between one neighbouring valley or district and another, and from general observation I think such is the case, and I regret I have been unable to procure returns from some other portions of the Highlands which might have brought out the fact."

I should like in conclusion to say a few words on the possibility of a classification of the English circles. Perhaps the materials for such a classification do not exist. The number of circles in England is much smaller, and the area over which they are scattered is much larger, than in Scotland. It is only in Cumberland, Devonshire, and Cornwall that there can be said to be groups of them, and nearly every circle in those groups has an individuality of its own. They vary greatly in diameter and in the sizes of the stones composing them, but they are all single rings, except the Gunnerkeld circle, though some have one or more stones inside them. The Cumberland circles have a more clearly defined entrance than those of southern England. Avebury and Arborlowe may be said to form a separate type, since they are shut in by high earthen embankments, and had in the middle a "cove," consisting of three stones, forming three sides of a square, with an open side to the north-east; Mayburgh, in Westmorland, may also have belonged to this type, but there is only one stone left inside the bank, so we cannot tell. Apparent references to the sun and stars are more numerous in England than in Scotland, where, however, more may perhaps yet be found if they are looked for.

Finally, we have in England Stonehenge, which may be said to form a class by itself, for there is nothing quite like it anywhere else. Its concentric double rings and double horse-shoes, and its so-called "altar-stone," recall the construction of the Inverness and Aberdeen types, though with great differences of form and still greater of purpose; and its north-easterly bearing and outlying stones connect it with, and indeed give the key to, other "sun and star" circles, while the shaping of the stones, and the tenons and mortices which hold the transverse stones in position, and the transverse stones themselves, give it a special character and one perhaps more modern than belongs to any of the other circles. It seems, indeed,

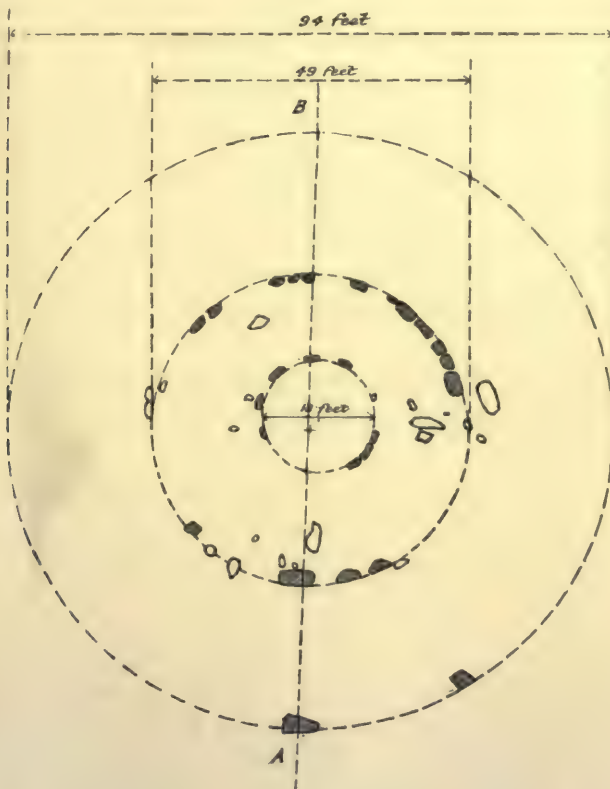
¹ *Memoirs of the Anthropological Society of London*, vol. iii, pp. 404 and 408, Dr. J. Beddoe on "The Stature and Bulk of Man in the British Isles."

as though it might, in its present form, have been the work of some later representatives of the early culture, who desired to unite in it the characteristics of various districts, and so to make it a generally representative monument; and the occasion for the erection of such a monument may be more or less correctly described in the tradition to which Geoffry of Monmouth and others have given a wide currency. This, however, is an unfashionable view, and is at the best extremely speculative.

APPENDIX A (INVERNESS).

The following circles in the country round Inverness are or were of the construction which I have called the Inverness type:—Tordarroch near Farr, Tordarroch near Crofteroy, Gask near Farr, Midlaig, Daviot (fig. 6), Culdoich of Clava, Milltown of Clava (2), Balnuaran of Clava (3), Little Urchany (*a*); all these

FIG. 6.



GROUND PLAN

Ground-plan of Daviot Circle, lent by the Society of Antiquaries of Scotland, from the illustrations to Mr. Fraser's "Descriptive Notes on the Stone Circles of Strathnairn and the Neighbourhood of Inverness,"

are in Strathnairn. Kinchyle of Dores near Scanipport, Inches (Leys) near Inverness, Newtown of Petty; these are between the Nairn and Ness. Carn Inernan in Black Isle, Corrimony in Glen Urquhart, Culbirnie near Beauly, Bruiach (Beaufort near Beauly), Alvie. Twenty in all.

The following are known to have existed, and there are still remains of some of them, but not in such preservation as to enable the details of construction to be made out:—Duhallow of Aberarder, Mains of Clava (2), Culchuinneig (2), Cantraybruich (2), Dalgrambich of Cantry, Balaurit of Cawdor, Little Urchany, (b) Auldearn, Mains of Moyness, Gelford of Moyness, Aldourie near Loch Ness, Torbrech, Culduthel, Stonyfield of Raigmore, Allanfearn, Culloden Tile Works, east end of Cullearine of Culloden, Mains of Dalcross, Balnabual of Dalcross, Flemington (2). Twenty-four in all.

There were also some small ordinary circles not of the special Inverness type, as, for instance, two at Milltown of Clava.

APPENDIX B (ABERDEEN).

The following circles in the country round Aberdeen have or have had the special stone locally called the "altar-stone," which differentiates the circles of the Aberdeen type from all others:—Old Keig, Balquhain, Balgorkar, Sinhinny. Auquorthies near Inverury, Newark, Lonmay, Chapel of Garioch, Lieth (Mill Hill), Auld Rayne, Midmar, Ardlair, Kirk o' Tough, Ardoyne, Dyce, Auchorthies near Aberdeen (a), Fiddes Hill, Strichen, Loudon Wood, Aikey Brae, Barmekyne of Echt, Rees o' Kleen, Garrol, Esslie, Malloch West, Cairnie, Monymusk. Twenty-six in all.

The following are so incomplete that it is uncertain whether they possessed an "altar-stone" or not:—Badentoy, Auchorthies near Aberdeen (b), Glossel, Cairn-fauld.

The following do not appear to have had an "altar-stone":—Hersch—Fordoun, Kingausie, Broomend of Crichtie, White Cow Wood, Auchterless, Leuchar—Skene.

It is probable that additions might be made to all these lists.

DISCUSSION.

Dr. BEDDOE contributes the following notes on the subject of this paper:—

There are of course considerable anthropological differences between the North-east and the West of Scotland, but how far these can be carried back it is difficult to say. The modern Aberdonians are to a large extent the descendants of immigrants from England, Norway, Denmark, Holland, etc., who streamed in, especially, during the eleventh, twelfth, and thirteenth centuries. Much the same is the case with the district of Moray (Elginshire and the lower parts of Nairnshire and Banffshire; about Inverness, however, the blood is pretty purely Highland or Gaelic).

The Eastern Highlanders may be taken, with little doubt, to be descended from the Picts, whoever the Picts were. I believe them to have been mainly what we call nowadays Iberian, but there may have been other, perhaps Finnic, elements in them. The Argyllshire people since about 500 A.D. are probably in the main descended from Dalriadic-Scoto-Irish colonists; but what were their predecessors, unless they too were Pictish? I know not. Everywhere near the coasts there are indications of a Norwegian cross, and this applies strongly to the north as well as the west. Lewis, Harris, Skye, Colonsay, Isla, have much Norse blood.

There is a type among the Gaels described by Hector Maclean and Sir Arthur Mitchell which is widely distributed, which they, I think, call Finnish, but I do not think that a good name for it. Short stature, dark complexion, large head, low intelligence, it is probably of very ancient date.

I think there is a really Finn-like type about Barvas, near Carloway.

A GENEALOGICAL METHOD OF COLLECTING SOCIAL AND VITAL STATISTICS.

BY W. H. R. RIVERS, M.A., M.D.

[PRESENTED APRIL 24TH, 1900. WITH PLATES II AND III.]

WHEN in Torres Straits with the Anthropological Expedition which went out from Cambridge under the leadership of Dr. Haddon, I began to collect the genealogies of the natives with the object of studying as exactly as possible the relationship to one another of the individuals on whom we were making psychological tests.¹ I soon found that the knowledge possessed by the natives of their families was so extensive, and apparently so accurate, that a complete collection of the genealogies as far back as they could be traced would be interesting and might enable one to study many sociological problems more exactly than would be otherwise possible, and with the stimulus of Dr. Haddon's encouragement I collected in Murray Island and Mabuiag genealogies which included the families of almost, if not quite, every individual now living on those islands. It is only, however, since leaving the islands, and while getting the data into order, that I have realised the many possibilities which I believe this method opens to the anthropologist.

Two genealogies are given as specimens. The Murray example (Pl. II) is complete so far as I was able to make it. The Mabuiag example, on the other hand (Pl. III), is only part of a complete family; Maku was married twice, and this genealogy gives his descendants by one of his two wives.

In both genealogies the descendants in the male line only are given; those in the female line are given in the families of the husbands to which the numbers given in brackets refer, thus in the Murray genealogy the descendants of Soroi and Gaum will be found in genealogy No. 65² giving the family of Soroi.

The names of the males are given in capitals and are always placed to the left of their wives', whose names are given in small type. The names in red in the Murray Island genealogy refer to the villages to which the individuals belonged; while in Mabuiag the names in red small type refer to the Augods (totems), and those in red capitals to the place to which an individual belonged, in the case of marriage outside the community.

The letters d.y. and d.u.m. signify "died young" and "died unmarried" respectively.

The names which are underlined are those of individuals now living.

¹ See *Journ. Anthropol. Inst.*, N.S., vol. ii, p. 219, 1899.

² The numbers given in these cross references refer to the numbers of the genealogies as I have them arranged at present. In the future complete publication of these genealogies this arrangement will probably be altered, and the numbers would therefore not correspond with those given here.

In Murray Island, where it was rarely possible to go back more than two or three generations, I have collected nearly seventy families. In Mabuiag, on the other hand, where one could trace farther back, the genealogies run into one another much more and are consequently fewer in number. In the Mabuiag genealogy it will be noticed that each family has more than one totem. These run through the whole clan.

The method of collecting the data may first be described. In Torres Straits, as in so many other parts of the world, the system of kinship is so wholly different from that of ourselves that many of our simplest terms of relationship cannot be used without the danger of great confusion and error.

In collecting the genealogies I therefore limited myself to as few terms as possible, and found that I could do all that was necessary with the five terms, father, mother, child, husband, and wife. Care had of course to be taken to limit these terms to their English sense. The term which was open to the most serious liability to error was that of father, but I was able to make the natives understand very thoroughly that I wanted the "proper father."¹

I took one individual as the starting-point of a genealogy, found the name of his real father and mother, then if either had been married more than once; then the names of their children in proper order and ascertained the marriages and families of each child. Thus in drawing up the Murray genealogy, my starting-point was Wam, the mother of Pasi, my informant. After having ascertained the descendants of Iu and Wam, given in genealogy No. 13, I asked the proper father and mother of Wam, ascertaining that each had only been married once. The children of Gasari and Koni were then given in order. Wam's descendants being already known and Maiwas not having married, I only had to ascertain the descendants of Charlie.

When these were exhausted, I returned to Gasari and inquired the names of his proper father and mother, the names of their children in order, the marriages and descendants of Kebar, and so on, till all the descendants of Tagai had been given.

There were some interesting differences in the mode of collection in the two islands, which were probably due to the greater extent to which the natives of Mabuiag have come into contact with civilisation. In Murray Island it was necessary to conduct operations with more or less secrecy, and to go away with one, or at most two, individuals to a spot where there was no chance of being overheard. This secrecy was always preferred by the natives of Murray Island when talking about any of their customs, but was probably rendered more necessary in this case by the penalties attached to the utterance of the name of a relation, or, at all events, of a wife's relation. It will be readily seen that any given family would come into several different genealogies, thus the family of Wasalgi and Olai in the Murray genealogy was not only obtained from Pasi in this case but also from Azao when giving the family of his wife, and

¹ In Torres Straits, all the younger men knew "pidgin" or "trade English." When working with some of the old men, one of the younger men would act as interpreter.

from other sources, and one of the advantages of the secrecy necessary in Murray Island was that nearly every detail of these genealogies was obtained from two or more independent sources, with the result that different accounts corroborated one another to an extent which forms the best guarantee of the truthfulness and accuracy of memory of the natives. There would be occasional discrepancies in such details as the exact order of birth of several children, the omission of a child who died young, and rarely the omission of a childless marriage, but on the whole the agreement between different accounts was extraordinarily close.

In Mabuiag the conditions were different. The secrecy required in Murray Island was here completely unnecessary. I often compiled my genealogies sitting in the huts, or on the sand, with a crowd of women and children sitting round listening to the information which the men were giving me. In some cases, even, the women were consulted. Often I was able to get several of the older men together, who consulted about points of detail, and it was obvious that some were looked up to by the rest as authorities on the subject. In Mabuiag I cannot therefore bring forward, as evidence of the trustworthiness of my genealogies, the same degree of independent corroboration as in Murray Island, but the close corroboration of accounts obtained on different occasions and the general consistency of the whole collection furnish conclusive evidence of their essential accuracy. Independent corroboration has recently come from Mabuiag. Waria, the present Mamus (or chief) of Mabuiag, who was one of the chief helpers of the expedition, was so impressed by the interest taken in the families of his people that he has drawn up an independent account of the genealogies of the island. Mr. Cowling, who lives in Mabuiag, has written out Waria's account, and has very kindly sent it to me, so that I have been able to compare his account of the genealogies with my own. In all essential points the agreement is very close, minor discrepancies being of the kind that I have already mentioned. Waria has also given a complete account of some families for which my data were only fragmentary, and the book sent me by Mr. Cowling will enable me to make the whole scheme of the Mabuiag genealogies very complete.

In Murray Island adoption was very common, and I cannot be certain that I have altogether avoided the errors due to the prevalence of this custom. A child was often adopted in the first few days of life (the adoption might be arranged before the birth of the child), and it was said that there were cases in which individuals had grown up, married, and died without ever learning their real parentage. I was aware of this, and was, in consequence, always careful that at least one of my informants in any given genealogy should not be closely connected with the family in question.

Mr. Bruce, who lives on Murray Island, has been collecting information for Dr. Haddon on various points since we left the island, and is inclined to be despondent as to the possibility of distinguishing between the real and the adopting father. At the same time, however, Mr. Bruce has sent some evidence

which supports the correctness of my genealogies in this respect. Two lawsuits, dealing with the disputed ownership of land, have recently been tried before the court in Murray Island.¹ These cases turned on the question of adoption and on the real parentage of two men. In each case several witnesses were called and the real parentage clearly established. On referring to my genealogies, I found that in each case my account of the parentage of the men in question is correct. One of these men, Olmek or Meiti, was an adopted son of Nau in the genealogy in Pl. II, and had inherited some land from Nau. Olmek had died, Nau's own children had left no heirs, and Tanu, as the next representative of Nau, had brought an action to recover the land from Olmek's widow. It was decided that Olmek was the adopted son of Nau, but nevertheless the right of his widow to the land was upheld.²

In these cases the real parentage of two individuals has been decided as definitely as such a question can ever be decided, and it is satisfactory that in each case my data have turned out to be correct. Nevertheless, it is quite possible that I have included adopted children in some families, but there is no doubt that, if this be so, the adopted child in such a case has become an integral part of the family, so that for many of the statistical purposes to which these genealogies may be put their value would not be affected.

In Mabuig, so far as I could find, adoption was much less common, although I have accounts of several cases. The chief difficulty in this island arose from the custom of exchanging names. A man would exchange names several times during his life and would be called sometimes by one name, sometimes by another. In some cases not only would a man exchange names with another man, but their wives and children would exchange names at the same time, and in collecting my genealogies I would sometimes come across a man, wife, and child with exactly the same names as others in an altogether different family, leading me at first to suppose that, in one case or the other, my information must have been wrong, and it was often only after considerable investigation that I was able to establish the identity of different individuals.

Having shown that extensive genealogies can be collected among savage communities which possess a high degree of accuracy, I may now point out some of the uses to which they may be put in the exact study of sociological problems, and in the collection of social and vital statistics. I have not yet drawn up any complete statistics because I am hoping to make the genealogies still more complete by the addition of some details about which I am making inquiries from Mr. Bruce on Murray Island and Mr. Cowling on Mabuig.

The first and most obvious value of the genealogies is that they enable one to study the systems of kinship very thoroughly. I have a large amount of material

¹ When we were in Murray Island, the court consisted of the Mamus (chief) of Murray Island and the Mamus of Dauar, with Mr. Bruce as an assessor. Since we left the island, a council of four natives has been added.

These cases will be published in full in the Reports of the Expedition.

giving the names of relationship which given individuals apply to other members of their community, and shall be able to give the exact equivalents of these in English terms of relationship. It will be possible to work out the system of kinship with a degree of definiteness which would not otherwise be possible. I need only say here that in both islands the system of kinship is of the kind known as "classificatory," and that the systems of the two islands present certain interesting differences.

The genealogies provide a large amount of material bearing on marriage customs. Dr. Haddon has described¹ the existence in the western tribe of Torres Straits of four intermarrying groups. The islands of Mabuiag and Badu together form one of these groups, and the genealogies show very clearly that the vast proportion of marriages take place between the natives of these islands who form one community in respect of marriage. Marriages out of the community are, however, not uncommon, and the data of the genealogies will give in statistical form the relative frequency of these marriages and the islands with which marriages of this kind most frequently occur.

In Murray Island, again, the vast majority of marriages will be shown to take place within the island and with natives of the two small adjacent islands of Dauar and Waier.² It will be shown, however, that marriages with natives of Erub or Darnley Island are not uncommon, and that occasionally marriages have taken place with natives of other islands. Similarly the frequency of marriages with members of other races will be shown.

Within the intermarrying communities, the genealogies will show very clearly the dependence of marriage in Mabuiag and Badu on the totemistic system. Individuals of the same clan do not marry one another. Among the Australians we know that not only is this the case, but a man of one clan must marry a woman of another given clan; a Cicada man must marry a Crow woman, and a Crow man must marry a Cicada woman. There is no distinct evidence of the existence within recent times of such a custom in Mabuiag, but it is probable that the statistics derived from the genealogies will show a tendency in this direction. Rough inspection of most of the genealogies shows that there is a tendency for certain clans to marry into one another, and when the genealogies are completed, one will be able to show the relative frequency with which individuals of one clan marry individuals of the other clans of the community.

In Murray Island, on the other hand, the genealogies will show that marriages are regulated by the places to which the natives belong. A man cannot marry a woman of his own village or of certain other villages. The totemistic system which probably at one time existed in this island appears to have been replaced by what may be called a territorial system. Here, again, the statistics of the marriages will show if there is any special tendency for certain villages to intermarry.

¹ *Journ. Anthropol. Inst.*, xix, 1890, pp. 301, 353, 356.

² The people of these islands now live on Murray Island.

The genealogies show that polygamy existed till quite lately in both Murray Island and Mabuag. On the latter island in one case a man still has two wives living, though one has been discarded owing to missionary influence. The custom, however, appears to have been exceptional. In some of the cases of polygamy two or more of the wives were sisters, and in the absence of polygamy it was still common for a man to marry his deceased wife's sister. In the Mabuag genealogy, the two wives of Nobua, viz., Pad and Swopei, were own sisters, and Panai and Gugui, the two wives of Iwau, were sisters according to the native system of kinship, though first cousins according to ours.

Another marriage custom which existed with polygamy, and will be shown by the genealogies to have been of frequent occurrence, is a form of the levirate. In the old days a man took his brother's widow in addition to any wife or wives he might already have, and even when he had only one wife, she was in many cases the widow of his brother. In the Mabuag genealogy, Iwau's second wife, Gugui, was the widow of Madui, Iwau's younger brother. Azigo, the wife of Gaulai, was the widow of Waup, who was Gaulai's second cousin according to our system of kinship, but Gaulai's brother according to that of the island. The marriage of Moipi, the widow of Wap, with Per was probably of the same kind, but I am not at present certain of the exact relationship of Wap and Per.

Another very common custom which continues to the present day is that brother and sister should marry sister and brother. In the Mabuag genealogy this was the case with two of the children of Maku; Umu, the wife of Paitu, was half-sister (by the same father) to Kadi, who married Kiesu, Paitu's sister.

Another instance occurs in the next generation; Gebi, the first wife of Gemini, was own sister of Uwaga. Another instance in the present day is in the case of Gizu's wife, Mudulpur, who was own sister of Iwau, who married Gugui, Gizu's sister. Gugui is thus an example of three different customs; she was the sister of her husband's previous wife, the widow of her husband's brother, and married the brother of her brother's wife.

In Murray Island, also, the same custom existed, and in the genealogy given the marriage of Tanu and Saiop, and of Barsa and Akoko, are examples of the custom. A recent marriage in Murray Island was delayed for some time because the bridegroom had not a sister to become the wife of the bride's brother.

All that can be done in the present paper is to point out the existence of these marriage customs; the statistics derived from the genealogies will show their relative frequency and will, I hope, help to elucidate the relation of these various customs to one another.

Before leaving the subject of marriage, I may give one instance which shows the value of the genealogical method as a means of discovering facts which direct inquiry failed to elicit. In spite of the certainty of the natives that a man never married a woman of the same clan, I met with instances in which a Dangal (dugong) man had married a Dangal woman. When I pointed this out to my informants at Mabuag, I altogether failed to get any explanation, although I

returned to the subject repeatedly, and I was inclined to believe that these cases, which according to the expressed views of the natives would be cases of incest, were evidence that the totemistic system was breaking down. It was in favour of this view that all the cases were comparatively recent. It is only lately, on working up the genealogies, that I have found that in these cases the secondary

totems were different, thus a $\left. \begin{array}{l} \text{Dangal} \\ \text{Kodal} \end{array} \right\}$ man has married a $\left. \begin{array}{l} \text{Dangal} \\ \text{Gapu} \end{array} \right\}$ woman. We

do not at present understand the significance of these secondary totems in Torres Straits, but there is little doubt that in this special case we have to do with separate clans, each having the dugong as its chief totem, and it is significant in

this respect that the $\left. \begin{array}{l} \text{Dangal} \\ \text{Kodal} \end{array} \right\}$ clan belonged to Mabuiag, while the $\left. \begin{array}{l} \text{Dangal} \\ \text{Gapu} \end{array} \right\}$ clan belonged to Badu.

The genealogies will illustrate other features of the totemistic system, in addition to those connected with marriage, which have already been considered. They will show very clearly, for instance, the descent in the male line, and the transmission of the secondary totems through the whole clan. Dr. Haddon has collected a number of facts which point towards a grouping of the totems of Mabuiag, and it has been seen that the marriages probably show something of the same kind, and I hope that the marriage statistics will furnish material which will help Dr. Haddon to clear up the meaning of this grouping. The significance of the secondary totems is another problem on which it is to be hoped that the genealogies will throw some light.

The social customs connected with names form another group which will be very largely illustrated by the genealogies. It will, for instance, be very clearly shown that there was in Torres Straits no trace of a "tabu" on the names of the dead. Names often recur in different generations, and several instances occur in which, one child having died, the next child of the same sex has been given the same name.¹ An extreme example of the absence of this "tabu" is the case of a woman named Salmui. This is probably a man's name and was the name of this woman's father. He was drowned shortly before the birth of this daughter, and his name was given to the posthumous child notwithstanding the sex. Such a case shows not merely the absence of a "tabu," but a very decided preference for perpetuating the name of the dead.

Numerous other interesting points in connection with names will also be brought out by the genealogies, such as the characters of male and female names, the relation between the names in Murray Island and Mabuiag, etc.

The subjects so far considered come under the heading of social statistics.

The special problems which come under the heading of vital statistics include the average size of families, the proportion of the sexes, the proportion of children

¹ In the Murray Island genealogy there is an instance of this; the firstborn of Charlie and Kaibor was named Kuliar, and died in infancy. While we were in Murray Island twins were born, and the elder received the same name. This child also died when a few weeks old.

who grow up and marry to the total number born, the proportion of the sexes who grow up to adult life, etc. The genealogies will furnish a large mass of material on these subjects, and it may even be possible to obtain some idea of differences in these respects in different generations.

A question of very great biological interest, on which the statistics may throw some light, is that of the relative fertility of different classes of marriage. From the biological point of view, the marriages in Torres Straits may be divided into three groups, viz., marriages within the island or intermarrying group, marriages out of the island or intermarrying group, but with members of the same race, and marriages with members of other races. In the first group there is a large amount of intermarriage, although much controlled by the marriage customs, thus in Mabuia marriages with a second cousin, or second cousin once removed through the female line, were common, and it was very difficult to find anyone in either Murray Island or Mabuia to whom a given native would not apply some term of relationship. It will, therefore, be interesting to compare the fertility of these marriages with others in which new blood has been introduced from outside, and the genealogies will probably enable one to do this in a sufficient number of cases to justify some definite conclusions. It is worth noticing here that Maku in the Mabuia genealogy, who has probably more lineal descendants on Mabuia than any other man, married two wives from Boigu and Dauan respectively. The natives of these islands are of the same race as those of Mabuia, but belong to a different intermarrying group.

During the last twenty or thirty years a large number of marriages have taken place with members of other races, especially with Melanesians, from the Loyalty and New Hebrides Groups. There have also been a fair number of marriages with Polynesians. In collecting the genealogies I was struck by the frequency with which these marriages were childless, and I have little doubt that when the statistics are worked out they will show that fewer children were born to such marriages than to those between members of the same race. If such a fact could be established, it would have great biological interest, but I am afraid that, in this case, there are disturbing factors. Many of the marriages were only of a temporary nature, terminating on the return of the husband to his own home. We know also that abortion was practised in Torres Straits, and it is possible that this practice may have been adopted more commonly in these than in ordinary marriages. The conditions are too complex to allow any confident generalisation without more definite knowledge than we possess.

While collecting the genealogies, I was frequently informed of various interesting facts in the lives of the people whose names occurred, and I believe that it would be possible to write a full and fairly accurate account of the recent history of a savage community by taking a complete genealogical record of the community as a concrete background. One of the chief sources of the vagueness which too often characterises the accounts of historical events obtained from savages is the indefiniteness of their ideas of time, and the genealogical details

would give definiteness to the narrative and serve the same purpose as dates in the history of civilised communities.

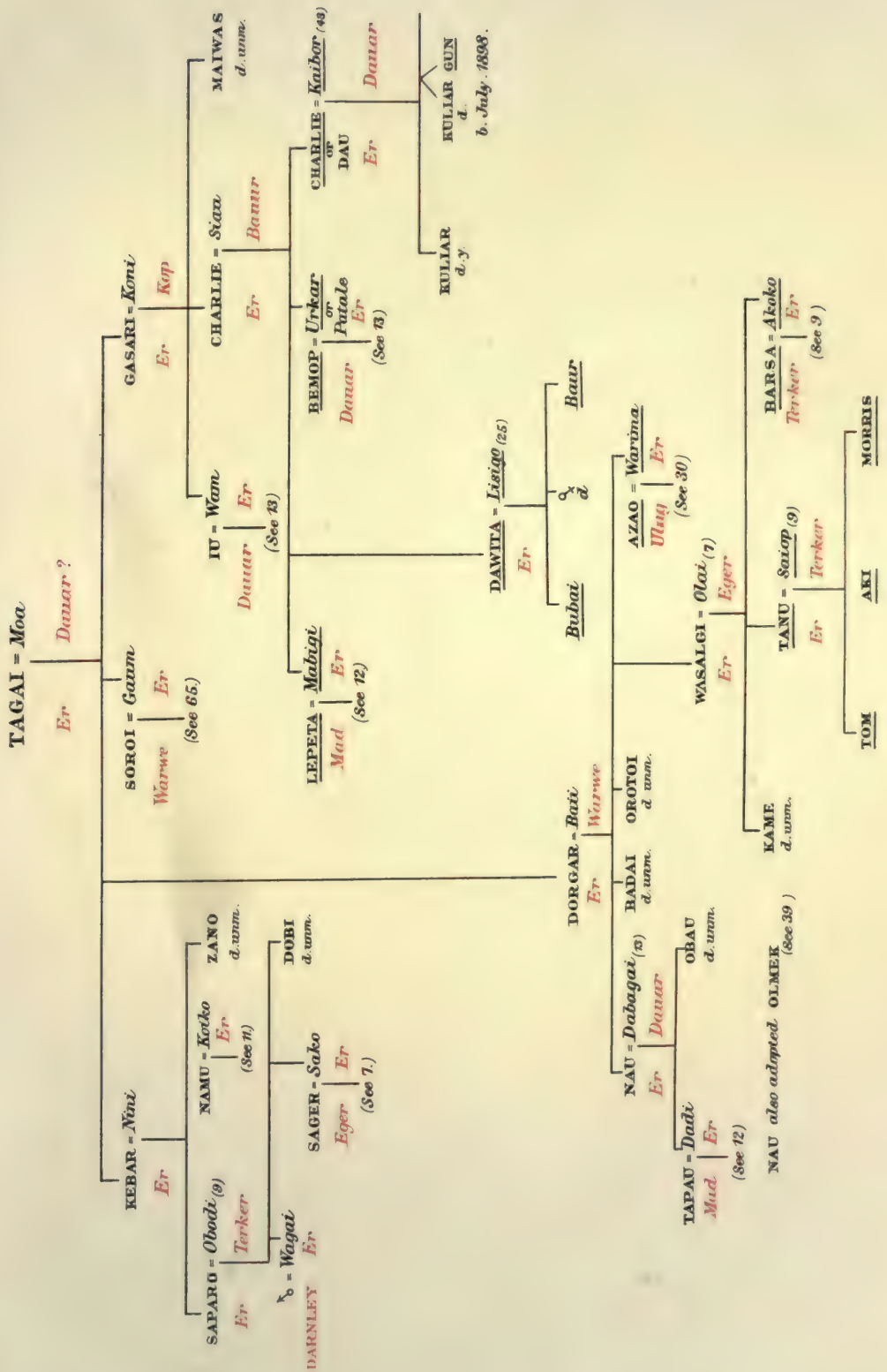
All who have experience of the savage mind must have experienced the difficulty of eliciting information on abstract questions, while, on the other hand, there seems to be hardly any limit to the number of concrete facts which can be remembered. The memory of the savage for names is as highly developed as in any European, and far more so than in those Europeans who are accustomed to abstract thinking. The great value of the genealogical method is that it enables one to study abstract problems, on which the savage's ideas are vague, by means of concrete facts, of which he is a master. It is a means of utilising the store of information which the extraordinary memory for detail of the savage has enabled him to accumulate.

The object of this paper is to bring before the members of the Institute an anthropological method, and I have merely sketched some of the problems which this method may help to solve. The statistics based on the genealogies of Torres Straits will, I hope, supplement the sociological material collected by Dr. Haddon, to whom I am glad of this opportunity of expressing my great indebtedness.

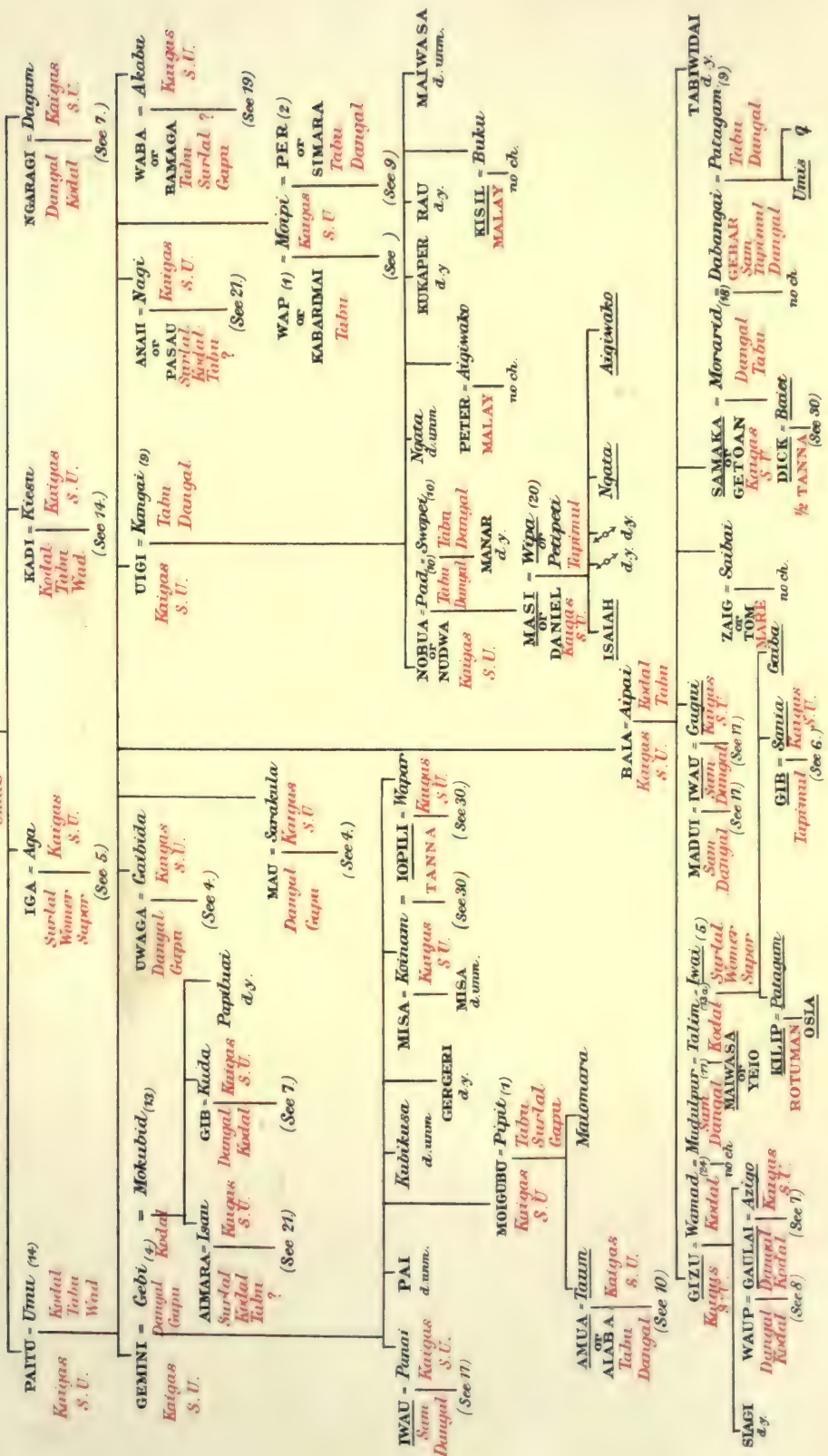
DISCUSSION.

Dr. JAPP, having complimented Dr. Rivers on the results of his very extensive labours and his excellent system of tabulation, which reduced most complicated phenomena to comparative simplicity, ventured to ask whether in the case of "interchange of sisters," referred to by him as existing among the people he was dealing with, there was anything in the least corresponding to what was common among the Gallas of East Africa. A young man there desirous of "exchanging sisters" with another, but, having no sister, would embrace the first opportunity to go to war or on raid to procure a female captive. Having first with all due formalities initiated her into the clan or tribe, the young man would then exchange her as a sister with his friend for his sister to become his bride. Dr. Japp remarked further that a noticeable peculiarity in this case was that the origin of these Gallas had caused much discussion among anthropologists, who declared that they were certainly not pure negroes, others again asserting that they presented proofs of really tracing to a white or a yellow race, and that they practised nothing like purchase, pure and simple, in marriage.

Dr. RIVERS said there was, so far as he knew, nothing corresponding to this in the case of the tribes he had dealt with.



MAKU = Kuika



STONE IMPLEMENTS FROM PITCAIRN ISLAND.

BY JOHN ALLEN BROWN, F.G.S., F.R.G.S.

[PRESENTED MAY 15TH, 1900. WITH PLATE IV.]

THESE stone implements from Pitcairn Island were brought home, with other objects of anthropological interest, by the author's nephew, Lieutenant Gerald T. F. Pike, R.N., then of H.M.S. *Comus*, when on a voyage in the South Pacific. The largest specimens are of such unusual form and size that description of the implements and Lieutenant Pike's notes in reference to them will no doubt be of interest to the members of the Institute.

Pitcairn Island was discovered by Carteret in 1767. It was then uninhabited, and continued unoccupied until the mutineers of the *Bounty* settled there. The island is about three miles long and about two in breadth; it is an outlying island of the Paumotu, Tuamotu, or Low (or Dangerous) Archipelago, but it is nearly 100 miles south of Oeno. There is no land to the east between it and Easter Island, from which it is distant about 900 miles, except two small islands, Elizabeth Island and Ducie Island. Pitcairn rises from the depth of the ocean in rugged cliffs of dark, dense basalt, and there is no anchorage except on a bank at its western extremity, and the best of its three landing-places is dangerous from the violence of the surf and a strong undercurrent. The long axis of the island rises on a range of steep hills attaining a maximum of 1,008 feet. The whole island is the result of vast submarine volcanic activity in the remote past. There are no springs or streams, and drinking water is often scarce, but the vegetation is luxuriant.

The stone implements obtained by Lieutenant G. Pike appear to be made from the hard compact basaltic rock of the island; in fact, it is the only material there which is suitable for the manufacture of stone implements. There are among them two classes or types, which are probably of different age, but they were all found about a foot from the surface. In the first series are the small stone axes or adzes now exhibited, of which five or six were brought home. They are chipped into shape and only ground on the cutting edges at the blades (Plate IV, 6, 7). They show one of the characteristic features of some of the stone axes from the South Seas, *i.e.*, the sides are worked to a ridge, and not flat, as in the case of the axe-heads of the Maoris of New Zealand, of the natives of the Hawaiian Islands, etc. The same mode of working is noticeable from Tahiti, the Wallis Islands, etc.

The second group of stone implements are entirely different in form. The axes also are chipped into a ridge at the sides, but in other respects they differ

entirely in shape or type from the first group (Plate IV, 1, 2). The body of the axes is often ground, but the large one with expanding blade (No. 2) is chipped all over and unground. In Lieutenant Pike's collection are several large axes of this kind exactly like it, except that some of the specimens are larger.

It is a remarkable feature of these larger axes or choppers, that the blades are incurved and expanding at the cutting edge, which gives them the appearance of the mediæval iron battle-axe of Europe, and they present us with what appears to be a much more advanced type, and as far as I know it is unique as a stone axe; at any rate, I have not been able to find anything like it in the British Museum, and M. Hamy, in speaking of this exhibit at the British Association last year, was understood to say he knew of no other specimens of the same kind as ever having been found before. No. 2, already quoted, is 15 inches long by $10\frac{1}{2}$ inches at the widest part of the curved blade, and about $2\frac{3}{4}$ inches in thickness at the thickest part. It is skilfully worked by chipping all over, including the blade, and not ground there as in the smaller axes first mentioned.

The butt end is reduced and wrought for easy insertion into a handle, which must have been very stout and heavy to carry it. There is a stop ridge to prevent the stone from being forced so far into the handle as to split it. These axes are all chipped to a ridge as in the group first described.

It is of course possible that these large axe-shaped implements may not have been mounted for that purpose. It has been suggested that such a wide-bladed implement might have been used for digging when fixed in a straight handle with a T-piece for the foot to drive it into the ground, but it does not appear to be probable, seeing that the incurved expanding blade forms the most important part of the form, which would hardly be the case with a digging tool or spade.

There is another great difference between these large axes and the small ones. In them the basalt has patinated white, whereas the latter are not bleached and appear to owe their brown surface to an iron oxide.

Among the other implements of the second class there is a long, heavy specimen which might be used as either an axe or an adze according to the hafting (No. 1). It is $19\frac{1}{2}$ inches long by $4\frac{3}{4}$ inches across the broadest part of the blade, which in this case is not expanded and incurved as the last. It has been chipped all over and then ground down all over, so that in places the chipping is nearly obliterated, as for instance at the broad part of the blade and on the cutting edge. There is a high ridge towards the butt, which is reduced for insertion in a heavy club as a handle. As in the other cases, the weathering has produced a white patina.

The smaller axe or adze (No. 5) is of similar type. It is made of the same rock and shows the same patina. It is chipped into the long axe form and ground down to a cutting edge from each face, and the grinding is continued over the greater part of the surface. Like the last, the butt end is tapered by grinding to receive the handle, and there is the usual stop ridge, but only about $2\frac{1}{2}$ inches from the end. It is $9\frac{1}{4}$ inches long by $2\frac{3}{4}$ inches broad at the widest part.

Several long bleached basalt chisels were discovered, of which No. 3 is a specimen. It is 1 foot 5 inches long, and tapers from the centre towards each extremity, terminating at one end in a ground chisel edge. It is of cylindrical cross section, and has been polished all over.

The use of such an instrument to a savage is not apparent. It may have been employed as a chisel to dig out a trunk for a boat, and it would have been suitable for use as a heavy club as well, as it is ground down at one end to take the hand or a handle. There are no signs that it has been used, nor is any battering visible.

No. 4 is a specimen of several heavy, nearly cylindrical stone clubs, ground or polished over the entire surface. It is $1\frac{1}{2}$ feet long and tapers from the centre towards the extremities, which is not the usual form of a club, and there is no reduction of the implement at either end for use in the hand, except the double tapering mentioned. It must be old, or the bleached surface of the black basalt would not have been formed. It has been suggested that this instrument may have been used as a beater or roller for beating bark in the manufacture of Tapa cloth, but it differs entirely in form from the stone beaters from Tahiti and other islands of the South Pacific. The latter are square in section, and the flat sides are engraved or cut on the surface in crimping or other patterns to produce a design on the cloth when finished. It may have been employed for crushing grain by rolling it in a hollowed wooden or stone mortar, as seen in specimens in the British Museum.

Besides these implements, Lieutenant Pike mentions the discovery of rude sculptures in relief on the face of cliffs in one part of the island as being well known to the inhabitants, and there are other prehistoric remains there which should be investigated.

The Rev. T. B. Murray, who resided for some time at Pitcairn,¹ speaks of several stone hatchets and spear-heads and a large stone bowl as having been discovered there. He mentions also that human skulls have been found there in graves with a pearl shell underneath each, and he infers that they were probably interred some centuries ago, but he gives no description of these crania and no information as to their affinities with skulls from other islands in the South Seas. Other persons who have visited the island have reported in the same way, that "skeletons with a pearl mussel beneath the heads were discovered there."

The most important fact mentioned by Mr. Murray is the discovery of four large stone images on a platform in the rock on a peak similar to those found at Easter Island. They are of rudely human form, with the hips roughly sculptured out of red lava. He found also on the east side of the island rude carvings of men, a bird, etc., in a cavern situated on the face of the cliff, all of which is corroborated by Lieutenant Pike, as at the time of his visit the figures were still existing, though much weathered. Other persons who have visited the island confirm this account, and say sculptured stone pillars and stone axes, etc., occur similar to those found at Rapanui (Easter Island).

¹ "Pitcairn," 1854.

Two other axe-heads are known of the same type as those in the first series, and formed of the same rock. They were obtained in 1841 from Pitcairn and are now in the museum at Dover. The larger one is straight and not incurved at the blade as are those of the second series. It is chipped into shape all over, except where the original surface of the block of volcanic rock of which it is made remains on one face. The second and smaller specimen is ground on each face to a cutting edge at the blade.

I attach much importance to the difference in the type of the axes obtained from islands of the South Seas, and as shown by sides being ridged in the case of the instruments from Pitcairn and other places in contradistinction to those found in different places in this extensive region. It may be that the difference in the shape and mode of working of these implements, combined with other evidence, affords a clue to the difference of race and line of migration of the people who have probably in succession inhabited the islands of the South Pacific Ocean.

There are many anthropologists who may, from their knowledge in other ways, throw light upon this interesting subject, though my remarks apply generally only to the types of stone implements. The axes or small hatchets from Tahiti are of exactly the same type (with ridged sides) as the smaller ones, but as far as I know, nothing like those of the large axes and other instruments has been found there or anywhere else in this region.

I have, by the courtesy of the officials, examined the specimens of rude stone axe-blades in the British Museum, and find that the axes from Tonga are of the same form and show the same mode of chipping to a ridge at the sides as the small specimens from Pitcairn (first series); there is, however, in the detailed information in the catalogue describing them more fully, a note which says that five or six of the axe-heads I examined, though said to have come from Tonga, are traditionally believed to have come from Uvea (Uvea?), Wallis Islands, west of Samoa. In none of these do the large wide incurved blades occur. The similarity of the type to the series of smaller specimens is, however, very marked.

The axe-heads from Samoa are rather flat at the sides, but not very pronounced in that respect. Others from there are more ridged and rather resemble the small axes from Pitcairn.

The stone axes from the Chatham Islands, like the Maori specimens, have flat sides, and therefore differ entirely from the Pitcairn axes. Nor is there any similitude between them and those in the British Museum from Cook's or Hervey Islands. They are of greenstone and ground all over.

In the North Pacific the axe-heads from the Hawaiian group have very distinct flat sides, and therefore in type are quite unlike those from Pitcairn.

The few stone axes of basalt from Easter Island in the British Museum are mostly very thick and cumbrous, and with rather flat sides. There is, however, one among them which somewhat approaches to the small axes of the first series described in this paper. There is stronger evidence of a racial connection between Easter Island and Pitcairn in the past in the gigantic as well as smaller

stone statues which have been discovered in the latter, as well as abundantly in the former, their flattened foreheads made, as is now known, to take a crown or other headgear.

Pitcairn is more than 900 miles west of Easter Island, but such a distance is not an impossible one to travel, and there are the two small islands already mentioned (Elizabeth and Ducie Islands) a little to the north of the direct route. Moreover, the natives of Easter Island held the tradition that they came from Rapa Iti (or Little Rapa) or Oparo, one of the Tibriai or Austral group. If so, Pitcairn would be on the direct line of route from the west. They have been considered to belong to the Sawaiori or brown Polynesians. Pitcairn may well have been a stopping-place nearly midway to their ultimate destination.

The prehistoric monuments at Easter Island, etc., are of the greatest importance in considering the early race, or more probably races, who found their way to Pitcairn, and for that purpose Mr. W. J. Thompson's *Report to the U.S. Museum* 1888-9, throws much light on the subject. Mr. Thompson gives the number of stone statues as 555, varying from 70 feet in height, the smallest 3 feet, the latter found in caves, the larger ones on platforms of rock. They are all of the same type—the head long, the eyes close under the heavy brows, the nose long, low bridged and expanded at the nostrils, the upper lips pouting, the aspect slightly upwards, and the expression firm and profoundly solemn.

The heads were in all cases cut flat on top to take the red tufa crowns, which have been found. The images represent the human body only from the head to the hips, where it is cut squarely off to afford a good polygon of support when standing. The ears are mere rectangular projections. Some of these statues are much older than others, and greatly weathered.

As far as description goes, this might very well serve for the stone idols found at Pitcairn. The sculptured rocks are covered with carvings representing human faces, birds, fishes, and mythical animals, all much defaced by the elements. It would be of interest if these carvings could be compared with those in the cliffs at Pitcairn—the remains of large stone elliptical houses of uncut stone, each with a small cave or niche to contain small images. These curious dwellings seem to have been built for the accommodation of the natives, while the festival of the "Sea-birds' Eggs" was being celebrated. The representation of birds on the rock in both Easter Island and Pitcairn affords another analogy.

Tablets with inscribed letters or signs in a language now unknown have been found on the former and should be sought on the latter.

Before concluding, it would be well to mention the bust cut in coral, now in the British Museum, obtained by Professor Haddon. It is of the same type, with flat head, etc., as may be seen in the Easter Island stone statues at the entrance of the British Museum. It was obtained from an island in Torres Straits. Mr. Thompson believes there is evidence of two races having occupied Easter Island, and that probably is the explanation of the two forms of stone implements discovered at Pitcairn. Both are probably very ancient, for the bleached surface of

those of advanced type could not be produced in the black basalt without subjection to the action of the air or water for a long period.

DISCUSSION.

Professor E. B. TYLOR, F.R.S., said that it was clear that these implements from Pitcairn Island show extraordinary specialization of form, independently of those of other islands; but that to generalise on the whole subject would be premature. The partial grinding of some of the implements suggests comparison with the ground instruments of Australia, with reference to the possibility that this method may have been introduced in both cases from the northern islands. He also expressed the desire that, considering the great interest attaching to the comparison of the images from Pitcairn Island with those of Easter Island, some representations of the former should appear in the *Journal of the Anthropological Institute*.

Mr. LEWIS mentioned the figures carved on the backs of the Easter Island images at the British Museum, and regretted that they were not so placed as to be more easily seen.



IMPLEMENTS FROM PITCAIRN ISLAND.
Described in the paper by Mr. J. Allen Brown.
Scale in inches : $\frac{1}{4}$ natural size.

ON THE EARLIEST COMMUNICATIONS BETWEEN ITALY AND SCANDINAVIA.

BY PROFESSOR OSCAR MONTELIUS.

[PRESENTED MAY 29TH, 1900. WITH PLATES V, VI, VII, VIII.]

THE commerce between Northern Europe and more southern countries goes very far back. During the first centuries after Christ, the Roman Empire extended over a great part of Central Europe, and the distance from the Roman territory in Germany to South Scandinavia was not a great one. In fact many Roman objects dating from those centuries have been met with in Sweden and in the other Scandinavian countries. But there have also been found in Scandinavia a great number of things belonging to the time before Christ, which can be shown to have been brought from Italy and Central Europe.

Bronze vessels like Figs. 1-4 date from the last centuries B.C. Many vessels of these types are known from Sweden, Denmark, and Northern Germany. They were all fabricated in Italy or other parts of Southern Europe.

From the middle of the last millennium B.C. date such *ciste a cordoni* as Fig. 9. The original of this figure was found near Lubeck; many similar *ciste* have been met with in Northern Germany, in Hanover as well as in Posen. To about the same time belongs the *situla* Fig. 8, found in Denmark. Other *situle* of the same type are known from Northern Germany. The *ciste a cordoni* as well as the *situle* were imported from the South, and many vessels exactly of the same types have been found in Southern Germany, in Austria, and Italy.

Earlier than the *ciste* and *situle* just mentioned are such bronze vessels as Fig. 10; and still earlier, those like Fig. 6. Five buckets of the same type as Fig. 10 are known from Northern Europe: one from Brandenburg, one from the northern part of the province of Saxe, two from Denmark, and the fifth from Sweden. It is very remarkable, that all these five foreign vessels were deposited with northern bronzes of the 5th period of the Scandinavian and North German Bronze age. Buckets of the same type occur in Southern Europe: one was found in Austria and another in Northern Italy, in one of the pre-Etruscan tombs at Bologna. Several vessels like Fig. 6 have been discovered in Denmark and Northern Germany, and other vessels exactly of the same type are known from more southern parts of Europe.

Personal ornaments of thin bronze with decorations of repoussé work in simple patterns, Fig. 7, belong to the same time as the buckets like Fig. 10. Such

ornaments are not rare in Sweden, Denmark, and Northern Germany; and they too have all been imported from Southern or Central Europe.

To the beginning of the last millennium B.C. belong such swords as Figs. 11 and 15, with blade and hilt of bronze. Some swords like Fig. 15 have ornaments of iron inlaid on the hilt. Their blades, however, are of bronze, and the inlaid ornaments of iron prove that they date from a period when iron had only just begun to be known. The new metal was so rare that it could only be used for decoration; the weapon itself was of the old material, bronze.

Many swords of these two types (Figs. 11 and 15) have been found in Denmark and Sweden. The original of Fig. 15 was discovered, some years ago, in the south-western part of Finland, opposite the Swedish coast. Exactly similar swords are common in Central Europe and Italy, and were evidently fabricated there. That swords like Fig. 15 were cast in Central Europe cannot be doubted, for a bronze mould for such a hilt (Fig. 14) has been found in Bavaria.

I mention also objects which were made in Central Europe, because their presence in Scandinavia tells us that about and before the time of the foundation of Rome there really was commerce between Northern and Central Europe; just as, on the other hand, the great number of Italian objects of the same period found in the Central European countries shows us how important the trade between those countries and Italy already was.

The bronze shields, Figs. 12 and 13, are nearly contemporaneous with the swords mentioned just now. One of these shields was found in Sweden, the other in Denmark, and similar bronze shields are known from Denmark and Germany. All of them were discovered in peat-bogs, and their wonderful state of preservation is due to the peat.

Similar repoussé ornaments to those in Fig. 12, which consist of wheels and pairs of snakes, and are imitations of the common Egyptian representation of the sun's disc and the two uræus snakes, are to be seen also on other bronze vessels (Figs. 16 and 18) dating from the very beginning of the last millennium B.C.

Two big vases like Fig. 16 were taken out from a peat-bog in Denmark; and two quite similar ones from a peat-bog in Mecklenburg. Two similar vases are known from Central Europe, one of these discovered in Bavaria and the other in Hungary. And a vase of the same form and with the same ornaments was found in Northern Italy.

The original of Fig. 18 was found in a Swedish peat-bog. An exactly similar vase, containing eleven gold-cups, stood in a Danish peat-bog. Similar vases have also been found in Denmark, Northern Germany, and Bohemia. Now, as several bronze vases of the same shape and with just the same decoration appear also in Italy, there can be no doubt that all these vases are of Italian origin. They occur both in Northern and Central Italy.

Of the same period as the big vases (Figs. 16 and 18) date such bronze-cups as Fig. 20, and many of them are found in Southern Scandinavia, Northern Germany, Central Europe and Italy.

A little earlier are bronze cups of the type Fig. 19. They, too, were imported into Scandinavia and Northern Germany from Italy or from some part of Central Europe, where the Italian influence was very strong.

To about the same time as the last mentioned bronze cups belong the small bronze chariots supporting bronze vases (Fig. 5), which have been discovered in Sweden, Denmark, Northern Germany, and Bohemia. They also are imported from the South.

From a more remote period, the middle of the second millennium B.C., there are a great many highly interesting proofs of the intercourse between Scandinavia and Southern Europe. The Baltic amber appears in Greece at least 1500 years B.C., for several hundred beads from Mycenaean tombs have been shown by chemical analysis to be of Baltic amber. On the other hand the influence of Southern Europe on Scandinavia was at the same time so strong that bronze fibulae (Fig. 17) and spiral ornaments of southern origin were common in our countries.

We can trace the same influence back not only to the beginning of the second millennium—Italian bronze daggers (Fig. 21) are found in Northern Germany; bronze daggers imitating them and bronze axes ("celts") of Italian form are common in Germany and Scandinavia—but even to the third millennium B.C., as I just have proved in a paper, printed in Germany.¹

It is a most remarkable fact, that all those bronze vessels and other objects coming from Italy are so common in the western part of present-day Austria, in Germany—especially in the more eastern parts—and in Scandinavia, but are so extremely rare in Western Europe. No such bronze vessels as Figs. 5, 6, 8–10, 16, 18–20 have been met with in France, Great Britain, or Ireland.

We can trace the route followed by the commerce that imported those objects into North Germany and Scandinavia. It was the same route as that which was followed by the amber trade from Denmark and North Germany to Southern Europe.

The time that was indispensable for carrying the Italian articles to Scandinavia was not long. We know that in the last century B.C. the tin came from the English Channel to Marseilles in about thirty days, so that two months would be sufficient to bring the bronzes from Northern Italy to the coast of the Baltic. And if we do not consider two months sufficient, we must at all events admit that six months or a year, or at least two years, would be enough. And if so, we are fully entitled to say that the Italian bronzes imported to Scandinavia were in use contemporaneously in Sweden and in Italy.

DISCUSSION.

The PRESIDENT: I need say nothing about the interesting character of the very remarkable lecture, as that is obvious to all of us; but I think this lecture has

¹ Montelius, *Die Chronologie der ältesten Bronzezeit in Nord-Deutschland und Skandinavien* (Braunschweig, 1900).

this advantage over those at University College, satisfactory both to him and to us, that it can be followed by a discussion, and I should like to invite such a discussion upon the clear *résumé* which has been laid before us of the relations between the north and south of Europe in remote periods.

MR. MYRES: I am sure that we have all followed with the greatest interest this detailed and masterly exposition of the work which Dr. Montelius has done in this very important subject. Dr. Montelius has given us a full and clear idea of the method of argument by which he has arrived at the conclusion that the successive styles of metal working and other industries as found in North and Central Europe approximately coincide in date with the styles which they most resemble in the Mediterranean area. It has, as we know, been very frequently assumed that a style of metal-working, which is found in the north, belongs to a considerably later epoch to that of a similar object found in the south. But what he said on the question of transit resolves the doubts which some of us have felt as to that. It would probably be possible to collect examples from other parts of the world also, of what seems surprisingly rapid transit from one district to another; one could quote for example the average rate of traffic in Central Africa and Persia, and other instances such as the Himalayan caravan routes, which present far greater difficulties than those which traverse the Alpine barrier. We can well understand, therefore, that although the time allowed for communication may frequently have to be expressed in years, it certainly does not run into centuries.

Another point upon which we should like to have further details, is the extent to which Dr. Montelius believes that in the course of a long series, of the kind which he has described, each successive period in the north may be regarded as apparently contemporary with the corresponding period in the south. One can understand that at the end of an interval of 500 or 1000 years the total rate of progress in the north might approximate to the total rate of progress in the south. But we know that in the Mediterranean, for instance, the rate of industrial progress was in all probability not uniform. We have evidence from time to time, in the Mediterranean, of halts taking place, of complications due to political changes and to emigrations, with the result that for the time some parts of the Mediterranean were apparently plunged back, or at least marked time for a while. Now we should suspect that in a case of that kind corresponding facts would be appreciable in the northern areas; and that at the time of a period of active and progressive commercial development in the Mediterranean, the later style would sometimes outrun the earlier in the northern area. I should like, therefore, to ask Dr. Montelius whether he finds that a period of stagnation in the Mediterranean is represented by a correspondingly long period in the north, and a period of expansion of commerce in the Mediterranean by a succession of short periods. I only mention this point because it might perhaps be of importance to anybody who failed to be convinced by the argument of actual caravan time-tables; and because, before those time-tables had been so clearly presented, some of us here had been inclined to argue that way; my own impression is that very little such overlapping in all probability has taken place, and that we can infer in turn from this that the rate of transit was fairly constant. If it were possible for Dr. Montelius to enlighten us on this point, and to tell us whether he has worked over his material in this way to any extent, the information would be of great interest.

Professor MONTELIUS: I can say this, that we can always distinguish these two things: objects made in the south and imported to the north, and things made in the north as imitations of them. We have not the Roman culture in Scandinavia, but we have something proving a strong influence from that direction. Taking the case of the Benin bronzes as a parallel, we can show that at a certain period there was a connection with Europe, when those peoples made their imitations of European things; and here, as we can fix the European periods, we can say what period that was. I think I can trace the different periods, in the south, centre, and north of Europe, and I can say for each period in the north whether it is exactly contemporaneous with each period in the south, because we have so many things made in the south and exported to the north, and we can date them with fair accuracy. It is not impossible to answer Mr. Myres' question, but the details are so voluminous that they could hardly be given now.

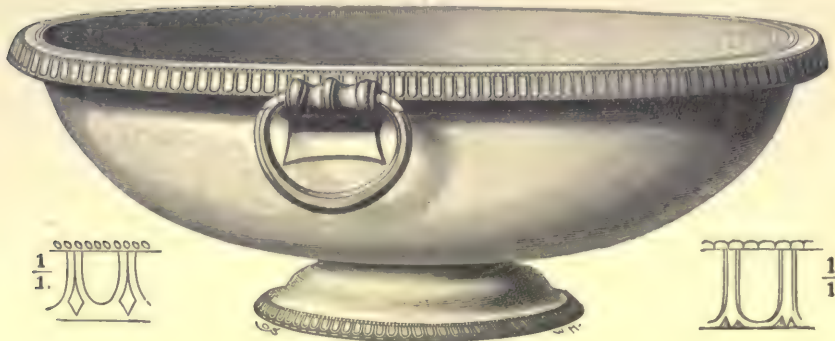
I should like to add one remark. I said that an object could make the journey from south to north in anything from half a year to two years. But the chief thing to know is what was the outside time that was necessary. We cannot say that everything was actually carried in so short a time, but if the average time is not *one* but *ten* years, it is all the same thing—and the object is contemporary.

Mr. LEWIS: I come here quite as a learner in this subject, but as the Chairman has said, Dr. Montelius has entirely proved his case. I am sorry, however, that he was not able to give us his views on stone tombs. The idea of making a stone tomb to hold a body has occurred to all peoples, and unless some very strong resemblance exists it is not possible to deduce any connection. Now there are considerable differences between the stone tombs of Holland and those of Brittany and this country, and differences exist also between tombs found in different parts of the same country, so I am afraid we cannot say much that is useful about them. I may mention one thing with regard to two tombs, one found in the south of England, and one in the north of Scotland, 800 miles apart. Both of them appear to have been laid down to exactly the same measure, the unit of measurement being the cubit of inches. It is quite obvious from what Dr. Montelius says that although the time of transit cannot be fixed to days, months, or even years, yet it is quite another thing to talk about centuries.

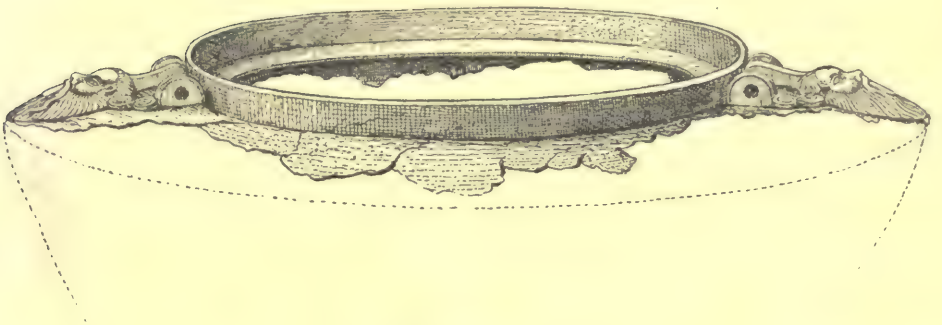
The PRESIDENT: In asking you to return thanks to Dr. Montelius I should like to say two or three words, more particularly on the subsidiary lessons which we get from such a statement as he has made this evening. I am inclined to agree with Mr. Lewis that the case is practically proved, and an interesting point is the very short time it took to make what we even now consider by no means a short journey. Many of these points have been before us for a number of years past, but I have never before heard so clear an exposition as Dr. Montelius has given us. I may say I think that Dr. Montelius is in an exceptionally fortunate position, as he belongs to a country where more care is taken of antiquities than in any other country of Europe, not so much as regards their exportation, but in such a way that they remain in museums where they can be studied; with the result of producing such lectures as we have heard to-night. As long as we are not very patient of legal restrictions, and think, when we find something, that it will look better in our drawing rooms than in any other place, we are not likely to do justice to our museums. But in course of time, perhaps, we shall improve. One of

the lessons we can easily learn from Dr. Montelius' lecture is the enormous value of archaeology in reproducing for us, in an absolutely accurate form, the history of prehistoric times. In critical literature we are confronted with varying accounts of historians set side by side. The advantage of dealing with prehistoric times is that the evidence is truly set before us by the things themselves, and it depends on our own judgment as to the deductions we make. There are several points which have occurred to me, but as the statutory time has arrived I will not enlarge upon them, except to point out how little effect this commerce had on prehistoric sites in Britain, and on our own art. Looking at these beautiful bronze vessels, ornamented with bosses and birds, I cannot help thinking that they are things which might have come to us, but did not. All these trade routes in primitive times had *termini*, and their object was amber. It is a curious thing that we have so few evidences of continental intercourse with Britain. We had, indeed, some intercourse, but to nothing like the extent that existed between Scandinavia and Central and South-eastern Europe. And this is the more curious because we had here not only tin but gold, as is shown by the discovery here of ornaments which differ from those of the Continent, so that we may assume that the gold itself was found here. It is remarkable, therefore, that there did not exist greater intercourse between the prehistoric peoples of Britain and the Continent.

In asking you to return to Dr. Montelius a vote of thanks, I should like to say how much it has added to our interest and pleasure this evening, that Dr. Montelius has talked to us in our own language, and with as great a facility as we do ourselves.



1. ESTLAND. $\frac{1}{4}$.



2 a. DENMARK. $\frac{1}{4}$.



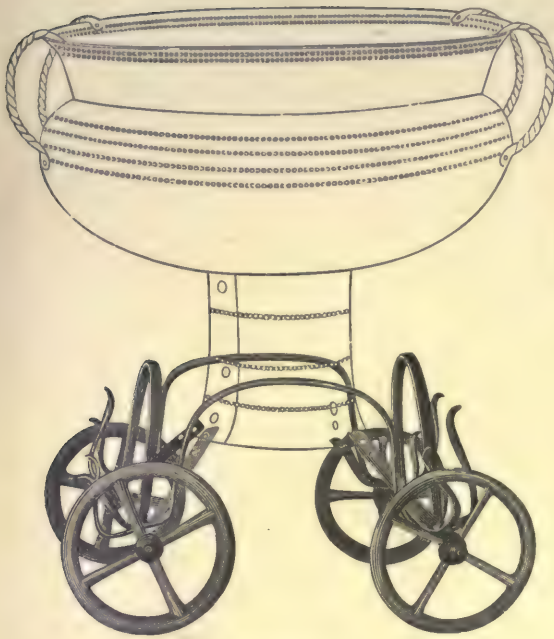
3. DENMARK. $\frac{1}{3}$.



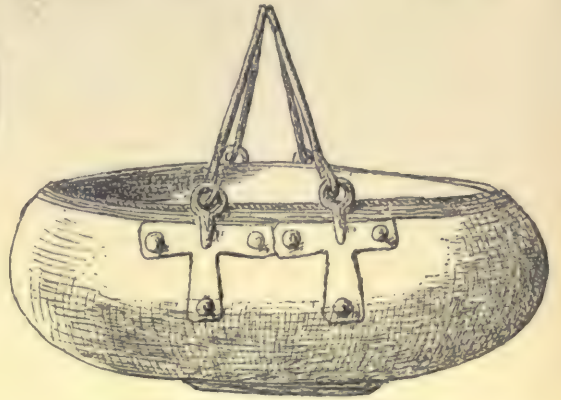
2 b. DETAIL OF FIG. 2 a.



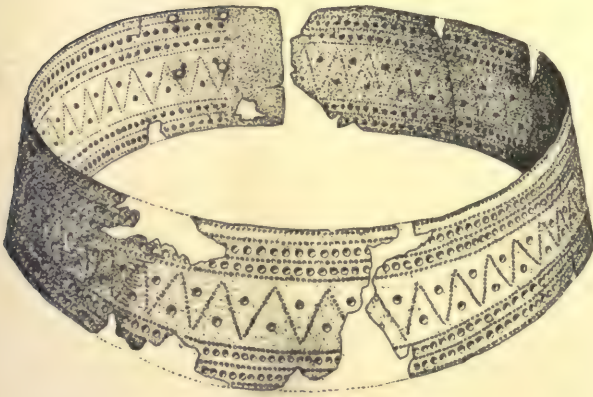
4. HANNOVER. $\frac{1}{4}$.



5. SWEDEN. $\frac{1}{5}$.



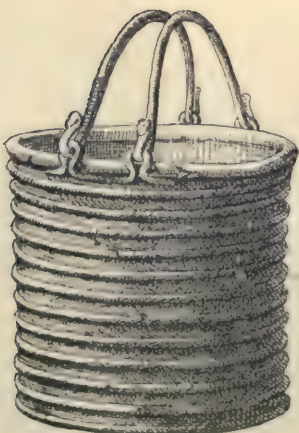
6. BRANDENBURG. $\frac{1}{4}$.



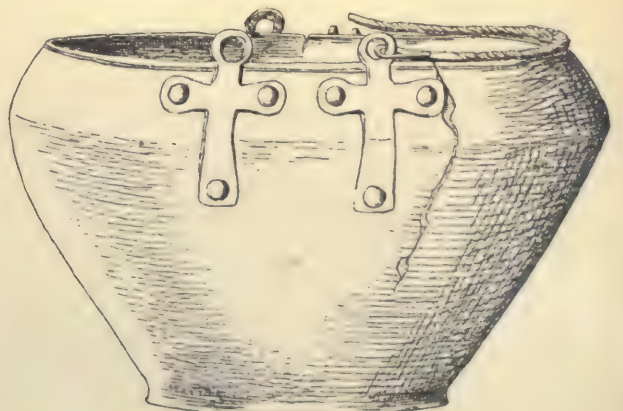
7. DENMARK. $\frac{1}{2}$.



8. DENMARK. $\frac{1}{4}$.



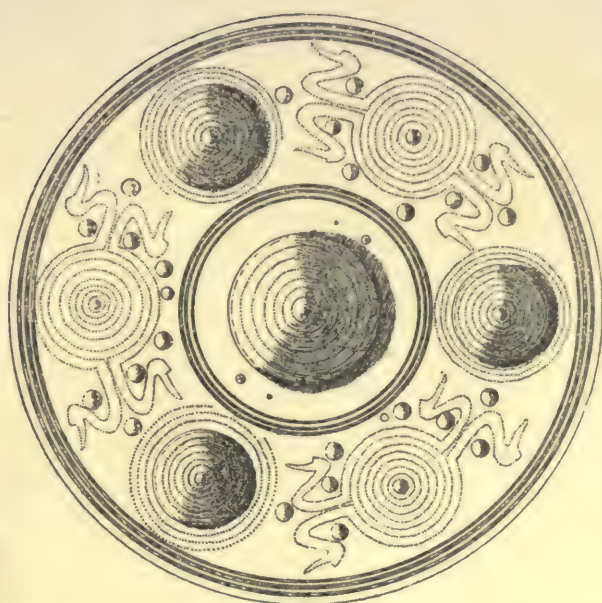
9. NEAR LÜBECK. $\frac{1}{7}$.



10. BRANDENBURG. $\frac{1}{4}$.



11.
SWEDEN.
 $\frac{1}{6}$.



12. DENMARK. $\frac{1}{6}$.



13. SWEDEN. $\frac{1}{8}$.



14. BAVARIA.



15. FINLAND. $\frac{1}{6}$.



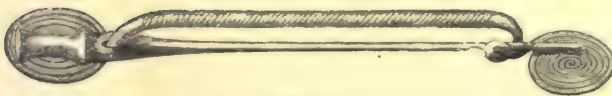
16. DENMARK. $\frac{1}{4}$.



19. DENMARK. $\frac{1}{3}$.



20. DENMARK. $\frac{1}{2}$.



17. SWEDEN. $\frac{2}{3}$.



18. SWEDEN. $\frac{1}{4}$.



21. MECKLENBURG. $\frac{1}{3}$.

RECENT ANTHROPOMETRICAL WORK IN EGYPT.

BY DAVID MACIVER, M.A.

[PRESENTED JUNE 12TH, 1900. WITH PLATES IX AND X.]

IN the following paper, which is a *résumé* of one read before the British Association at the Dover meeting, I wish to bring forward a somewhat new experiment. This experiment is the employment of anthropometry as an aid to the solution of historical and archæological problems. It is singular how rarely the archæologist makes use of anthropometry, although it might be supposed that the physical characteristics of a race were not less important in determining its origin and connections than the evidence of myth, language, custom, and æsthetic production, which is so freely and often so uncritically employed.

The chief reason for the neglect to which I have referred is probably to be found in the difficulty of dating the specimens. Measurements taken from various cemeteries of different periods and in different countries are of little value if they cannot be arranged in a definite sequence of time and put into relation with one another geographically and historically. Now it is precisely in this respect that the worker in Egypt finds himself in a peculiarly favourable position; so much so, indeed, that it may be fairly claimed that Egypt is the starting-point for all anthropometrical work which aims at establishing historical connections. For, owing to the progress which has been made within the last generation, it has become possible to date accurately every cemetery which is excavated. Professor Petrie, to whom so much of this progress is due, has from the first insisted upon the importance of measuring and comparing the skulls and the bodies found; and it is as a result of the work carried out in connection with his systematic excavations that there are at the present moment available series comprising over 1,400 examples, which are divided into eight periods according to their dates, and which range almost uninterruptedly through the whole length of Egyptian history from the neolithic age to the fall of the Roman Empire.

How great an advance this represents may be judged from the fact that the catalogue of the Royal College of Surgeons enumerates only thirty specimens. These, in the absence of any proof to the contrary, may be separated from one another each by a period of two hundred years, and may belong to three or four different race stocks. And yet from such slight material has been made the attempt to deduce the type of "Ancient Egyptian."

Before proceeding to any comparison between the various series to which reference has been made, it will be well to explain the new method upon which these measurements are now being published. In publishing a large number of measurements there are two objects to be aimed at; the first is to give all possible details, the second is to give them in a form which is intelligible and expressive and which enables them to be easily worked over. These requirements are not fulfilled by the methods which are ordinarily adopted. Of those in common use, the first method is to set out all the individual specimens one after another, accompanied by a list of their measurements. This is merely flinging a note-book into print, and leaves the whole work of tabulation to be done by the reader. The other is to arrange the indices in groups and to state how many examples fall within each group. This is occasionally misleading if the groups are not made close enough to one another to show the distribution of the examples. But even at its best this arrangement destroys as much as it preserves. The identity of the specimens is lost, and it is impossible to trace combinations of characteristics. It may, for instance, be stated that, as regards the cephalic index, a certain number of the specimens are narrow-headed and a certain number broad-headed; that as regards the nasal index a certain number have slender noses and a certain number have broad noses; and so on throughout the various measurements. But there is no possible way of discovering how these features are combined in the various specimens, whether the long head accompanies the slender or the broad nose, the straight or the projecting face. The reader is entirely precluded from inquiring whether there are any general rules of combination or whether there are not. He is, in fact, presented with a series of composite photographs, isolated and incapable of being compared together.

In setting out the measurements taken at Denderah in the season of 1898, I have therefore adopted a new method, which, while it is quite simple, combines the requirements of clearness and detail. The principle adopted is that of giving, as it were, a chart of the district of measurements within which the specimens are comprised (see Plate IX).

Thus, for instance, in comparing the length and the breadth of the skull the figures giving the length are written in a vertical line at the side, and those giving the breadth are written in a horizontal line along the top or bottom. The chart is thus divided up into chessboard squares, in which the specimens are pigeon-holed, each according to its measurements. Every specimen is given a particular number by which it is denoted all through the various diagrams; this, which may be called its "name-number," is always reserved for it, so that the identity of every specimen is preserved, and it is only necessary in order to find all its measurements to look for it by its number in the several diagrams.

It will be noticed that in Plate IX the figures at the side and along the top represent not the index, but the actual dimensions in centimetres and millimetres. This is done deliberately in order to show the size of the skull as well as the ratio of its parts. For it is one of the worst points in the system

of tabulating by groups of indices that specimens of which the actual dimensions are enormously different are placed within the same index group. Thus, to quote actual examples from the prehistoric series, one specimen measures 196×143 and another 179×131 . These give an almost identical index, and according to the method which is in common use would be put down in the same group in spite of a difference of 17 millimetres in length and 12 in breadth.

Again, it happens sometimes in comparing together series of different dates that the average index has not altered, but the average absolute dimensions have greatly increased or decreased in the intervening period. It is therefore on all grounds of paramount importance to give the absolute dimensions as well as the indices.

In Plate IX the indices are shown by the diagonal lines drawn across the chessboard squares. They are arranged at regular intervals, as the irregular divisions of Broca are inconvenient. As, however, the latter are so universally known, their place is shown by the broad brackets.

Such a chart as this gives, therefore:—

- (1) The absolute length.
- (2) The absolute breadth.
- (3) The cephalic index.
- (4) The dispersion of the specimens according to their absolute measurements.
- (5) Their dispersion according to indices.

All this is done within a very small space, and at the same time the identity of every specimen is preserved.

Such charts can be used in all cases where it is desirable to compare two measurements. Where, however, it is only wished to set out one class of measurement by itself, the "name-numbers" can be utilised in another way. They are put out in a line, each opposite to the measurement to which it belongs, and if attention is paid to the spacing, the length of these lines automatically registers the frequency with which any measurement occurs. Consequently a curve drawn through the extremity of these lines will answer all the requirements of the ordinary curve of frequency (Fig. 1).

It will be remarked that some of the "name-numbers" are written not horizontally but at an angle. This denotes that such specimens are not sexed with absolute certainty; as if the bones are broken it is often impossible to be quite assured of the sex by judging from the skull alone.

VI-XII DYNASTY	
530	238
529	228
528	233
527	
526	
525	
524	
522	
520	
518	
516	
514	
512	
510	
508	
506	
504	
502	
500	
498	119
496	306-
	77
494	
492	
490	200 307
488	89 332
486	
484	244
482	67
480	
478	289
476	209 251 285
	68
	245
	176 234 259 288 324
474	268 270
472	114 188 315
470	85 146 6 * * *
	254 301
468	291
466	170 196
	203 278
464	265 316
462	152 261 266
460	133 311 320
	222
458	142
	123 130 177 294 302
456	180
	160 171 195 * * *
454	282
452	163 200 243 300 319
	240
450	84
	252
448	122
446	60 175 281
	87 168
	347
444	82 154 219 286
	87 258
442	317 328
	66 127 212
440	158
	144 187 220 274 * *
438	
436	141 247
	304
434	83 142 308
432	113 126
	60 215 323
430	199
	185
428	309 320
426	21
	108
424	231 278
422	
420	184
418	
416	255
414	94
412	
410	229
408	135
406	163
404	
402	312
400	

FIG. 1.—FEMUR MAX.

As a matter of practical convenience it should be stated that it is almost impossible to write the numbers sufficiently clearly to bear reproduction on a much reduced scale. It is well, therefore, to use type-printed numbers and to affix these to the paper in their places.

Tables on this model, which have been re-cast and arranged for publication by Professor Petrie, are now appearing in the "Denderah" memoir of the Egypt Exploration Fund.

Passing now to the consideration of the various series, I shall deal only with three indices, the cephalic, nasal, and alveolar, as these have been found in other cases to be those most characteristic of race divergencies. For a complete comparative study of the periods it would of course be necessary to collate all the other measurements both of the head and of the limbs, and the full material for such a study is provided in the publication of the measurements. For a broad treatment, however, these three features may suffice.

In Plate X is shown a comparison of these three indices with their fluctuations, in the different periods. The first period, both in date and in importance is the "prehistoric." In this are included all examples antecedent to the fourth dynasty. At the present moment it is impossible to more accurately subdivide the prehistoric period, although it is hoped that Professor Petrie's classification of pottery will soon enable this to be done. The period, however, certainly includes two very different civilisations, and presumably, therefore, two different race-stocks. Thus the people of the earlier prehistoric time lived in a stone age, using implements of flint; were cannibals; manufactured a pottery of unequalled beauty of form; but had no system of writing and had made little advance in the arts of drawing and carving. The people of the later prehistoric time, on the other hand, began to use implements of copper; abandoned, if not cannibalism, at any rate the burial practices which give the clearest evidence of it; and, most important of all, employed an already elaborated system of hieroglyphic writing and showed considerable skill in carving. The line of cleavage between the two is plausibly placed at the beginning of the Egyptian dynasties—that is to say, about 5000 B.C. or a little later.

There is very good reason, therefore, for presuming the presence of two very different races in the Nile valley before the age of the pyramid builders; but until the pre-dynastic and the early dynastic periods have been accurately differentiated, we can only conjecture which of the two stocks, of which the skull measurements as well as the archæological data give an indication, was the earlier and which was the later. In attempting to establish the characteristics of the prehistoric peoples, not only the anthropometrical material but also the portraits which they have left of themselves have to be taken into consideration. Such portraits are probably in the main, if not entirely, of the early dynastic period. Some are to be seen in *Nagada and Ballas* (Petrie and Quibell, London, 1895); others will be available when Mr. Quibell publishes the results of his excavations at Hierakonpolis.

The measured specimens come from two sites, viz., Nagada (1895) and Hou¹ (1899). Both show a very strongly dolichocephalic type, the median falling as low as 721 and 718; the nose is broad, especially at Nagada, and the profile fairly straight.

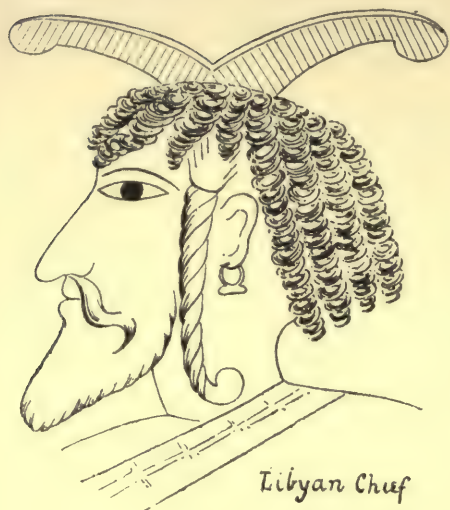
It is noticeable that throughout the whole historical series, down to the end of the eighteenth dynasty, the measurements of the women are much more consistent and show much less variation than those of the men. The cephalic index of the women remains almost the same throughout the whole 4,000 years. This fact is of considerable importance in making a conjectural division of the two prehistoric peoples. That series in the males which most nearly corresponds to the typical female measurement is likely, in the absence of contradictory evidence, to be the older, and the subsequent fluctuations in the measurements of the men would be due to causes which left the original type of women almost unaltered. Thus, in considering the nasal index, it is found that the nose is much broader in the men from Nagada than in those from Hou, but it is the broader nose which corresponds more nearly to that of the women, from which I deduce that the Nagada men, so far as the nose is concerned, represent the older stock, a belief which is confirmed by the fact that this type of nose is that which is in the most extreme opposition to the slender nose of the fourth dynasty. On the other hand, the median of the female alveolar index at Hou is as high as 977; in the men from Nagada it is 960, in the men from Hou 970. Here, therefore, in spite of the dangers of the cross-division, I believe that in respect of the alveolar index it is the men from Hou that represent the older stock. In the cephalic index the males of both series practically coincide.

On the basis of this arrangement it would appear that the oldest prehistoric people were very long-headed and very broad-nosed, but had a comparatively straight profile. It has been suggested that there is a negroid strain to be observed in them, but if this be so it must be very remote, for though the nose is broad, it is not so broad as that of the negro, and the straight face of the prehistoric Egyptian is most unlike the projecting negro muzzle. It is an interesting coincidence, but probably nothing more, that the Hou series corresponds very closely in all three indices to the regrettably small series of Veddahs given in the catalogue of the Royal College of Surgeons, whose cephalic index is 711, nasal 503, alveolar 963.

The negroes, it has been remarked, cannot have been the main source of the prehistoric Egyptian stock. An European origin is improbable, for the dolichocephalic peoples of prehistoric Europe seem to resemble it in nothing but the lowness of the cephalic index. There remain as possible places of origin North-Western Africa, East Central Africa, and Asia. The race-type of East Central Africa will be presently shown to have been radically different. Asia is not an impossible provenance, but North-Western Africa seems more probable.

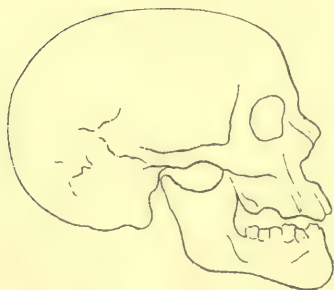
There is a good deal to connect the prehistoric Egyptians with North-Western Africa (see *Nagada and Ballas*). The survival amongst the Kahyles of Algeria of a

¹ More accurately described as Abadiyeh. Results not yet published.



Libyan Chief

FIG. 2.



Prehistoric Egyptian Skull

FIG. 3.



Head of Libyan Chief.

FIG. 4.

pottery almost identical with a very characteristic and peculiar form of prehistoric Egyptian pottery is especially remarkable.

Of measurements of ancient and modern Algerians there are lamentably few which can be utilised. I defer discussion of these till another occasion.

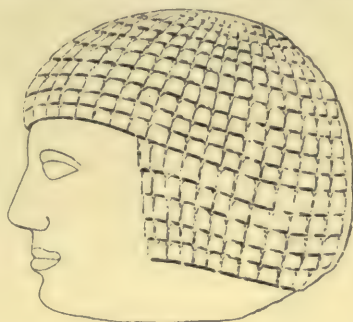
In *Nagada and Ballas* was published an extremely clever comparison between the head of a Libyan chief from the temple of Rameses III at Medinet Habu and a very typical skull from the Nagada cemetery. The heads are here reproduced (Figs. 3-4). In both is seen the same long head, straight face, and aquiline nose. The head of another Libyan chief, after Wilkinson (Fig. 2), shows the length of the head still better, as there is no headdress, and the curls of hair follow the hinder projection of the skull. This second example shows a straighter nose than that of the Libyan from Medinet Habu, and the difference corresponds to one which I observed in measuring the Hou skulls, some of which seem to have had an aquiline and others a comparatively straight nose. It is worth remarking that the Libyan chiefs wear a long side-lock like the Horus-lock of Egyptian children and princes.

A reference to Plate X will show that at the close of the prehistoric period a most remarkable change takes place. The type of skull entirely alters. The cephalic index rises from 718 or 721 to 760, while exactly at the same time the nasal index sinks from the 530 of Nagada and 501 of Hou to 480. Such changes do not take place without a reason. There can be only one explanation, namely, that they were caused by the influx of a large number of foreigners of a homogeneous

stock. That is to say, the country was at this time invaded by a people with much less narrow heads and with much slenderer noses than their predecessors. The fact of this invasion is the most important result elicited by the comparison of these measurements. Archaeology might guess at it; anthropometry, so far as present data go, has well nigh proved it.

It must remain for the present an open question whether this invasion coincided precisely with the fourth dynasty or slightly preceded it. I am inclined to believe the latter, and if this were the case the difference in the breadth of the nose between the Nagada and the Hou series would be explained. The Hou series would already show the influence of the new arrivals. Only future work can definitely settle the question, but it seems quite probable that this notable invasion, or perhaps a first wave of the great movement, slightly preceded the fourth dynasty, and coincided with the appearance of the earliest dynastic Egyptians and the introduction of copper and hieroglyphic writing. This newly introduced type continues unchanged during the fourth and fifth dynasties, with the exception of a curious drop in the alveolar index during the fifth dynasty, and it cannot be determined whether this is an accident or a general modification until more examples of the period are available.

If, now, the Egyptian wall-paintings be consulted for races which unite the necessary characteristics of a comparatively short head, a slender nose, and a straight profile, it appears that one, and only one, answers to the description. In this case, however, the resemblance is so close as to put the identification beyond doubt. The invaders of this period who ousted the Libyans were the people of Punt, or what we call Somali-land, including perhaps a strip of the opposite coast (see Figs. 5-6). Their features are well known from the representations of them at Deir-el-Bahri, and a comparison of the men there represented with statues of the fourth or fifth dynasty will convince any observer of the identity of the two stocks. This is not, of course, the first time that the resemblance of the Punt people to the early Egyptians has been pointed out, but it is only now, when the anthropometrical data have been brought to bear, that it has become possible to fix precisely the date of their entrance into the country.



Head of Nenkheftka. Vth Dynasty.

FIG. 5.



Man of Punt.

FIG. 6.

The next period, sixth to twelfth dynasties, presents a difficult problem. The measurements show a broad nose, not, indeed, as coarse as that which has been provisionally assigned to the *earlier*, but practically identical with the *later* prehistoric, accompanied by a cephalic index which is neither of the narrowest nor of the broadest headed type, but exactly half-way between the two. If the skull breadth alone were taken into account, nothing would be easier than to suppose that this is the mathematically exact result of mixing the two preceding stocks. It is with the nasal index that the difficulty arises. Should it be shown that the earlier prehistoric nose is that which prevails at Hou, there is no alternative but to suppose that the Libyan stock was very strongly reinforced by a new influx between the sixth and twelfth dynasties. This is possible in view of the discoveries made in the season of 1898-99. If, on the other hand, the opinion which has been advanced in the earlier part of this paper prove correct—viz., that it is the men of Nagada who exhibit the original type of nose peculiar to the Libyans, and that the nose as it appears at Hou is the result of an admixture of the Punt people already beginning a little *before* the fourth dynasty—then the case is altered. It would then follow that the nose of the sixth to twelfth dynasties showed a measure almost precisely half-way between the coarsest Libyan nose and the slender nose of the people of Punt. That is to say, the nasal index would give a result exactly analogous to that given by the cephalic index, and would show a compromise between the two originally so divergent types.

What, then, is to be said of the twelfth to eighteenth dynasties, where the slender nose reappears in its most extreme form? It is evident that the compromise established in the immediately preceding period has broken down, the fusion of the two types has been interrupted. The nose index sinks to 476, and the cephalic index to 730. This indicates a new disturbance, but let it be noticed that it is not due to the reinforcement of either of the already existing races. Had it been that more Libyans entered the country, the nasal index would have risen instead of falling; had it been that more Puntites came up from the south, the cephalic index would not have fallen, but would have risen as it did in the fourth dynasty. Here, therefore, it is a new people which appears; it is a third element which enters into the formation of the "Ancient Egyptian." The new people combines a head nearly as narrow as that of the Libyans with a nose as slender as that of the Puntites. They may have been allied either to the dolichocephalic races of Europe or to those of Asia. It is a very significant fact that the period of this second great invasion coincides with that historically ascribed to the Hyksos.

This, then, was the chief movement which appears in the dark period between the Middle and the New Empire. It does not, however, follow that in this troubled time there were not other race disturbances in Egypt, but it is probable that none was so strong as this, as none has left its traces so clearly marked on the anthropometrical chart.

The eighteenth dynasty itself shows some further slight modifications which

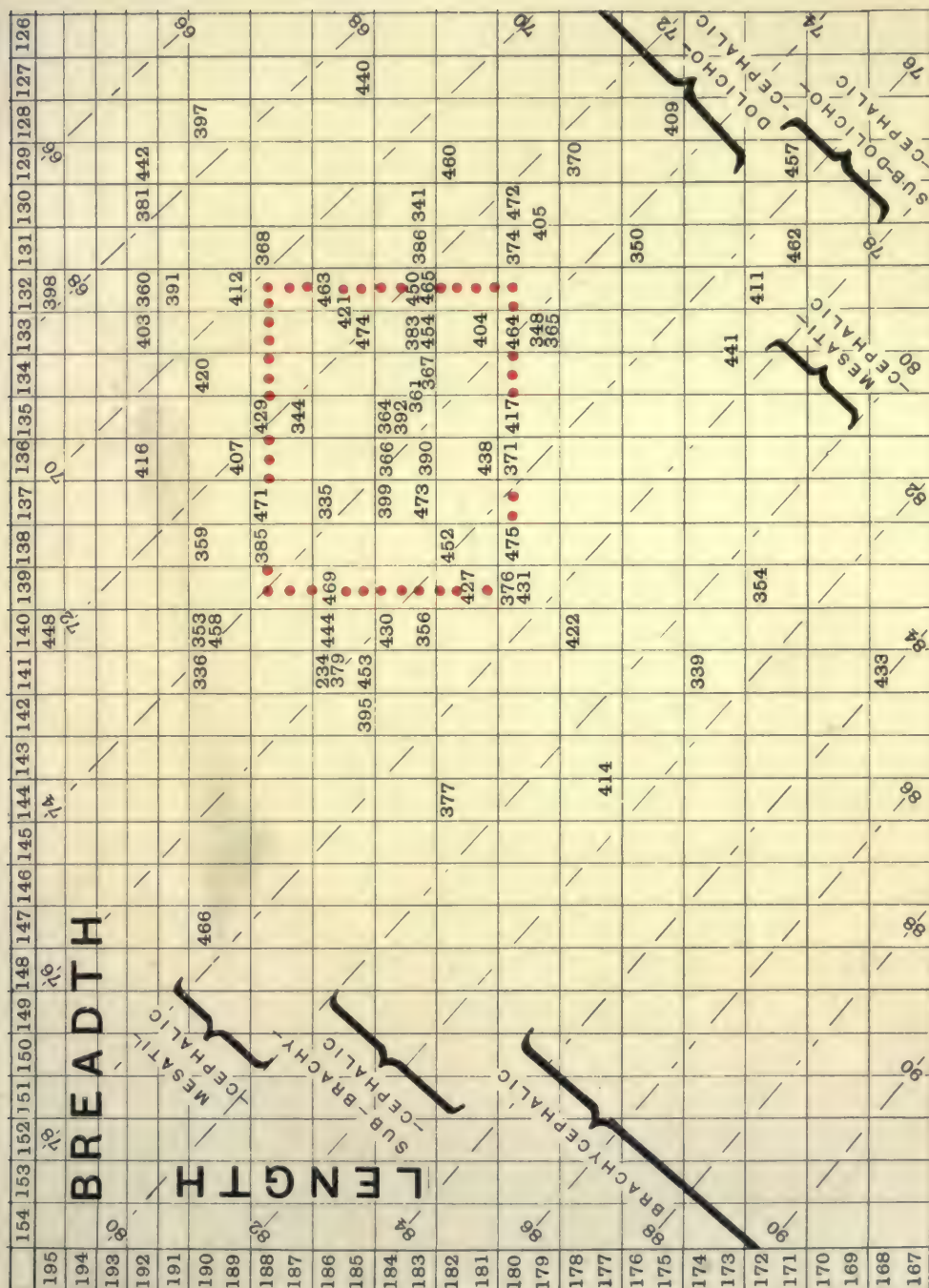
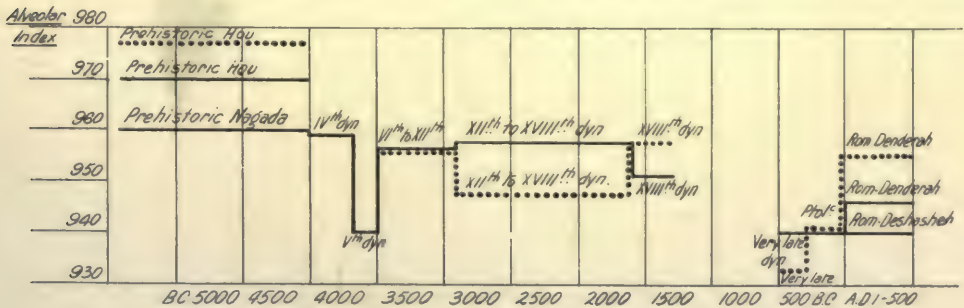
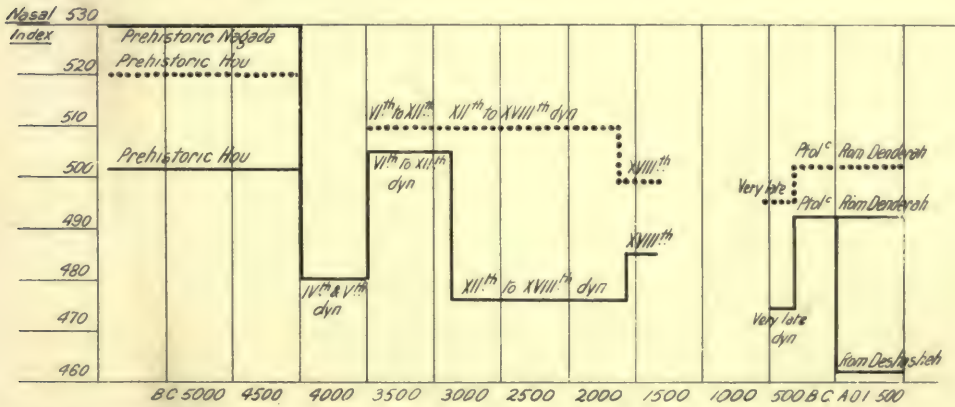
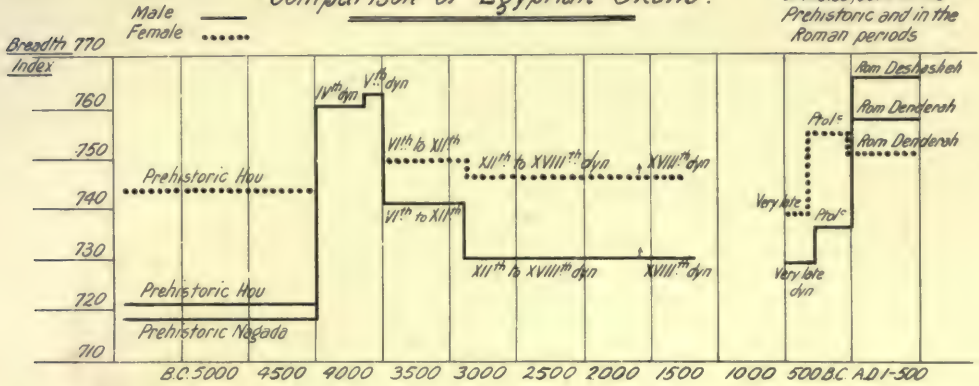


Diagram 3.

Comparison of Egyptian Skulls.

N.B. There are two series of Males, both in the Prehistoric and in the Roman periods



Approximate number of examples

Median as shown in the above diagrams

Prehistoric	XVIII th dyn	120
Nagada	80	Very late dyn 32
Hou	300	Ptolemaic 140
IV th and V th dyn	32	Roman (180)
VII th to XII th dyn	320	Denderah 100
XII th to XVIII th dyn	100	Deshasheh 180

	Breadth	Nasal	Alv		Breadth	Nasal	Alv
Preh ^c	710	53	96	XII th to XVIII th d	730	476	958
Nag ^d	721	501	970	XVIII th d	745	510	968
Hou ^d	743	520	977	Very late dyn	730	485	952
IV th d	760	481	959	Ptolemaic	745	499	958
V th d	783	480	94	Roman Dend ^d	729	474	940
VII th to XII th d	790	505	957	Roman Deshasheh ^d	736	492	940
XII th to XVIII th d	748	510	957	Roman Dend ^d	759	502	944
				Roman Deshasheh ^d	765	462	94
				Roman Dend ^d	748	502	957

may be plausibly attributed to the close connection with Syria and to the Syrian marriages then so fashionable.

After the eighteenth dynasty there is a gap in the series not greatly to be deplored, as this period of constant foreign interference or domination by various aliens would probably do nothing but confuse the argument. When the measurements are again observable, about 500 B.C., they show little change beyond a slight straightening of the profile indicated by the fall in the alveolar index.

The measurements of the Ptolemaic and Roman periods give results of exactly the kind which would be expected from the known history of the times. The influx of people from all round the Mediterranean, the employment of Gallic mercenaries, the foundation of Greek colonies such as Ptolemais, and the quartering in the country of numerous Roman garrisons lead to a chaos of types from which only one point clearly emerges, and that is a noticeable broadening of the skull as compared with the dolichocephalic forms prevailing just before.

To recapitulate, therefore, the examination of these measurements leads us to consider that the country was, when it first comes under our notice, held by Libyans with very long heads and very broad noses. These are supplanted probably rather before the fourth dynasty by the Puntites, with heads which are much broader and noses which are much slenderer. From the sixth to the twelfth dynasties ensues a period of fusion, or rather perhaps a mixture, of these two stocks. Between the twelfth and eighteenth dynasties occurs an invasion by a people not hitherto observed, having narrow heads combined with fine noses. This brings us almost to the close of Egypt's independent existence, and the succeeding modifications of the physical type do not explain history, but are explained by it.

I hope that this superficial review of an enormous mass of material may convince the reader that anthropometry can render very real service to archaeology alike by suggesting new facts and by confirming old theories.

What is needed now that these series of measurements have been made in Egypt is that those who are excavating or intend to excavate in Mesopotamia, in Syria, in Greece, and in all countries which have had a geographical or historical connection with Egypt, should collect similar material. The comparisons which it would then be possible to make would, I am convinced, result in throwing much fresh light on these most ancient civilisations in cases where unaided archaeology is powerless.

THE PHYSICAL CHARACTERISTICS OF ADULTS AND SCHOOL CHILDREN IN EAST ABERDEENSHIRE.

BY JOHN GRAY, B.Sc., AND JAMES F. TOCHER, F.I.C.

[READ JUNE 12TH, 1900. WITH PLATES XI TO XVI.]

IN 1895 it was suggested by one of the authors (J. Gray) to the officials of the Buchan Field Club that they should undertake an ethnographical survey of their district. The suggestion was enthusiastically taken up, and a meeting was called to explain the *modus operandi*, and the objects of the survey.

It was resolved at the meeting to commence operations at the Mintlaw Gathering, an annual open-air function where some thousands of people from the surrounding district come together for sports, dancing, and other national amusements. Mintlaw, where the observations were made, lies near the centre of Buchan, one of the ancient divisions of Scotland. The dialect spoken by the rural population, at the present day, is a species of Lowland Scotch. Gaelic, no doubt, was spoken at one time in the district, but probably not within the last six hundred years. Previous to the thirteenth century the earls or mormaers were Pictish; at least so it is recorded in the Book of Deer, and the evidence is strengthened by the existence in early times of succession through the female. The people who attend the Mintlaw Gathering belong almost exclusively to the agricultural labouring or farm servant class.

The plan of operations decided upon, was to note the colour of the hair and eyes, and the shape of the nose of all persons as they entered the grounds. A tent was also erected in the grounds where measurements were made of all persons who chose to come. At the gate an enclosure was erected for the accommodation of the Club. It was divided into four compartments, within which were stationed eight members of the Club, two in each compartment, an observer and a recorder. The observers noted the colour of the hair and eyes, and the shape of the nose of adults as they purchased tickets at the entrance and passed the divisions between the compartments.

At the gate, 2,309 males and 551 females were observed. In the tent 169 male adults were measured and noted as to pigmentation, etc. (Group I.)

The success which attended our efforts at the Mintlaw Gathering induced us to attempt a pigmentation survey of the whole of the school children in the district. One of the authors (J. F. Tocher) proceeded to interview teachers in

various districts and found them all highly interested in the proposed work, and ready and willing to co-operate so as to make a complete and accurate set of observations. On the 31st October, 1895, sheets and a circular letter were issued to over ninety schools, enclosing a packet containing specimens of hair for guidance in referring to the nearest standard shade. Each packet contained a typical specimen of red, fair, brown, and dark hair. At a meeting of the teachers, a short paper was read (by J. F. Tocher) explaining the objects and value of the survey, and a case containing artificial eyes, intended to show the different varieties of dark, medium, and light, was exhibited; fourteen tubes containing varieties of the four standard shades of hair colour found in the district were also exhibited.

Early in 1896 returns began to come in, and by the end of the year the survey of 75 schools had been completed; the last of the returns had come in by the end of November, 1897. Altogether observations were made in and returns sent from 93 schools, covering 30 parishes, embracing the pigmentation statistics of 14,561 children—7,717 boys and 6,844 girls.

After the Mintlaw Gathering, the adult survey was also continued. Instruments were supplied to several members of the Club, who had kindly consented to measure people in their neighbourhood as opportunity offered. A considerable number of working men and fishermen were measured by one of the authors (J. F. Tocher) in Peterhead. Rural people and fishermen were measured at Lonmay by the Rev. J. Forrest; and rural people were measured at Ellon by Mr. D. Cameron. The total number in this last batch was 195 of the rural population (Group II) and 38 fishermen (Group III). We regret that up to the present we have not got a larger number of the fishing population, because this class does not intermarry with the rural population, and interesting results due to this isolation might have been deduced. The small number we have got show, as will be seen, considerable differences in their physical characteristics, a result which may or may not be confirmed by the examination of larger numbers.

PIGMENTATION.

We propose in the first place to deal with the pigmentation statistics.

The question of the standards of colour employed in making observation is a matter of the greatest importance. Unfortunately there has hitherto been a great want of uniformity in the standards employed in different countries and by different observers. The tables on pp. 106-7 have been drawn up to show the relations between the schemes of Virchow and Beddoe, and that which we have employed in our observations. We have also added a standard which, as a result of experience, we would propose for future observations, with the view of making statistics obtained more completely comparable with the very extensive statistics that have been collected on the Continent.

Under Virchow's scheme, the statistics of nearly 10,000,000 children have been collected in Germany, Austria, and Switzerland; while under Beddoe's some thousands of observations, chiefly on adults, have been made in this country; yet

STANDARDS OF COLOUR—EYES.

Names of Colours.	VIRCHOW. GERMANY, AUSTRIA, and SWITZERLAND.	BEDDOE.		BUCHAN FIELD CLUB (GRAY & TOCHER).	Proposed Standard.
LIGHT.	PURE BLUE.	LIGHT.	Blue (all).	Blue.	Blue (all).
			Bluish gray.	Bluish gray.	Bluish gray.
			Light gray.	Light gray. Very light green. Very light brown.	Light gray.
	GRAY.	NEUTRAL.	Very light hazel. Yellow and green. Dark gray. Brownish gray and all uncertain colours.	Dark gray. Orange and gray. Greenish.	Very light hazel. Yellow and green. Dark gray. Brownish gray and all uncertain colours.
					Same as Beddoe.
BROWN.	Brown.	DARK.	Brown.	Brown	Brown.
			Dark hazel.	to	Dark hazel.
	Black.		Black.	Black.	Black.
Number of Observations.	9,468,937 children.			14,551 children.	

we shall see that at the light end of the hair and especially of the eye colours it is impossible to establish any exact equation between them.

The horizontal lines in the tables are intended to define as exactly as possible the limits of the categories in each scheme.

Virchow divides all eyes, first, into two departments, blue (or light) and brown; and then subdivides blue eyes into pure blue and grey, and brown into brown and black. In effect, Virchow has three categories for eyes, namely, pure blue, grey, and brown.

Beddoe has three categories for eyes; light, neutral, and dark. Beddoe's light category is larger than Virchow's pure blue since it includes light grey. Beddoe's dark category is identical with Virchow's brown. The categories which we have hitherto employed for eyes, are practically identical with those of Beddoe's. In any future observations in this country, it appears to us to be desirable that the statistics should be comparable both with the results obtained on the Continen

STANDARDS OF COLOUR—HAIR.

Names of Colours.	VIRCHOW. GERMANY, AUSTRIA, and BELGIUM.	BEDDOE and BRITISH ASSOCIA- TION.	BUCHAN FIELD CLUB (GRAY & TOCHER).	Proposed Standard.
BLOND.	Light yellow. Whitish yellow. Ash blond grayish yellow. gray brownish. Light brownish. Red blond.	FAIR. Flaxen. Yellow. Golden. Light browns. Pale auburns (with red incon- spicuous).	White. Flaxen. Yellow.	Flaxen. Yellow. Golden. Light browns. Pale auburns (with red incon- spicuous). Same as Beddoe.
RED.	Fiery red.	RED. All shades of red which approach more nearly to red than to brown, yellow, or flaxen.	Auburn. All shades of red.	All shades of red which approach more nearly to red than to brown, yellow, or flaxen. Same as Beddoe.
BROWN.	Brown. Dark brown.	BROWN. Numerous shades of brown answer- ing more nearly to French, <i>chatain</i> & <i>chatain clair</i> .	Medium shades. Chestnut. Dark brown.	All browns up to
BLACK.	Jet black.	DARK. French <i>brun</i> , dark- est <i>chatain</i> up to NIGER. Darkest brown. Jet black.	DARK. Darkest brown. Jet black.	DARK. Darkest brown. Jet black.
Number of Observations.	10,077,635 children.		14,561 children.	

and with those obtained by Beddoe and others in the British Isles. This we think could be done by the slight modification of subdividing Beddoe's light category into pure blue and light grey. In the last column of the table of eye colours we show the classification which we propose to meet the requirement of being comparable both with Beddoe's and Virchow's schemes.

The differences in the hair-colour standards that have been extensively used are perhaps not of such essential importance as those in the eye-colour standards. Virchow's red category is somewhat narrower than that which has been adopted in this country, since he includes in this category only what he calls "fiery red"

(*brandroth*) hair. His brown category includes Beddoe's brown and dark categories, and his black is smaller than Beddoe's *Niger*, since it does not include darkest brown.

We have adopted practically the same standard as Beddoe and the British Association, except that we have amalgamated Beddoe's brown and dark into one category, brown. It seemed to us that it was unnecessary to distinguish between shades of brown in a preliminary survey carried out by a large number of different individuals, since very fine distinctions of colours would be worthless owing to the unavoidable errors introduced by the personal equation. The standard, therefore, which we would propose for future observations is practically the same as Beddoe's with the difference mentioned above. The standard is comparable with Virchow's except in the case of red; and Virchow himself admits that the statistics of red hair which he obtained in Germany are untrustworthy.

The method of making the observations of adults at the gate, of Mintlaw Gathering, has already been described. The numbers and percentages of complete combinations of the three features observed are given in the printed report of the Ethnographical Survey of Buchan (*Transactions of the Buchan Field Club*, 1895, Tables I, II, III, pp. 18–20). In these tables the persons observed are classified in the first place according to the colour of hair. Each hair colour is then subdivided among the eyes according to the colour of eye possessed by each, and further subdivided in the nose division (A). Column nose (B) represents the hair and nose combinations (including eyes), *e.g.*, in Table II (A) there were 35 females who possessed red hair, and of these, 10 had dark eyes, 12 had medium eyes, and 13 light eyes. Of the 10 who had red hair and dark eyes, 1 had a straight nose, 8 had concave noses, and 1 a wavy nose. Of the 12 who had red hair and medium eyes, 6 had straight noses, 3 concave, and 3 Roman. Of the 13 who had red hair and light eyes, 5 had straight noses, 7 concave, and 1 Roman. Leaving the eyes out of account, there were 35 females with red hair, 12 of whom had straight noses, 18 concave, 4 Roman, and 1 wavy.

The percentages for females and males separately, and for both together, as may be seen in these tables, are as follows:—

			Hair.				Eyes.		
			Fair.	Red.	Brown.	Dark.	Light.	Medium.	Dark.
Females	...	...	9.8	6.4	54.8	29	21.6	39	39.4
Males	...	...	9.5	5.6	66.2	18.7	26.3	50.9	22.8
Total	...	...	9.5	5.7	64.1	20.7	25.4	48.6	26.0

These figures show that there is a greater percentage of dark hair among females than among males, and also a greater percentage of dark eyes.

This fact is interesting, and has been observed also among the Jews, and in regions like Alsace, where a blonde race has invaded a brunette country (see Ripley's *Races of Europe*). Karl Pearson has shown by the analysis of statistics that the hereditary resemblance between ancestors and descendants in the female line, or in the male line, is much greater than between ancestors and descendants of opposite sexes. The above statistics therefore point to an invasion by blonde males of a district with an aboriginal brunette population, and confirm Ripley's hypothesis.

If we examine the combinations of hair and eyes among the 2,309 males observed, we find 67 per cent. of fair-haired persons have light eyes, and only 6 per cent. dark eyes. But of dark-haired persons only 13 per cent. have light eyes, and 50 per cent. have dark eyes. Red and brown-haired persons occupy intermediate positions as shown by the following table:—

Hair.	Eyes.		
	Light.	Medium.	Dark.
Fair	67·7	25·9	6·4
Red	53·8	37	9·2
Brown	21·9	59·5	18·6
Dark	13	37	50

This appears to us to show that the natural order of hair colours is fair, red, brown, and dark; and not red, fair, brown, and dark as adopted by Beddoe.

The following table gives the combinations (in percentages of the whole population) of hair and eye colours of the rural population (2,860 males and females) observed at the gate at Mintlaw:—

Hair.	Eyes.			
	Light.	Medium.	Dark.	Total.
Fair	6	3	—	9
Red	3	2	1	6
Brown	14	37	13	64
Dark	2	7	12	21
Total	25	49	27	100

The following table gives the combinations (in percentages of the whole population) of hair and eye colours of the agricultural labourers (males) observed in the tent at Mintlaw (Group I)¹ :—

Hair.					Eyes.			
					Light.	Medium.	Dark.	Total.
Fair	...	...	...	...	10	8	—	18
Red	...	...	...	...	2	—	—	2
Brown	...	...	...	...	21	15	4	40
Dark	...	...	...	...	2	23	15	40
Total	...	...	...	...	35	46	19	100

The following tables give the combinations for (a) the mixed town and rural population (Group II); (b) for the fishermen (Group III) :—

A. Mixed town and rural : Group II.					Eyes.			
Hair.					Light.	Medium.	Dark.	Total.
Fair	...	...	...	...	13	4	3	20
Red	...	...	...	...	1	—	1	2
Brown	...	...	...	...	10	8	7	25
Dark	...	...	...	...	14	21	18	53
Total	...	...	...	...	38	33	29	100

B. Fishermen : Group III.					Eyes.			
Hair.					Light.	Medium.	Dark.	Total.
Fair	...	...	...	...	8	—	—	8
Red	...	...	...	...	3	—	—	3
Brown	...	...	...	...	26	5	11	42
Dark	...	...	...	...	16	13	18	47
Total	...	...	...	...	53	18	29	100

¹ The complete statistics of Groups I, II, III are to be published in the *Transactions of the Buchan Field Club*, vol. V, Part iii, 1900.

The following table gives the combinations of the 14,561 school children :—

Hair.					Eyes.			
					Light.	Medium.	Dark.	Total.
Fair	...	...	...	...	15	8	2	25
Red	...	...	...	...	4	2	1	7
Brown	...	...	...	...	18	19	10	47
Dark	...	...	...	...	4	6	11	21
Total	...	...	...	...	41	35	24	100

An inspection of these tables shows that there are considerable differences in the percentages of the combinations even among the three groups of the adult rural and town population; the fishermen and school children show still greater deviations.

In order to compare accurately the different groups it is necessary to devise some method of finding the mean pigmentation. The method we have adopted will be explained by the help of the diagram on p. 112. This diagram contains twelve squares of equal size representing all the combinations of hair and eye colour arranged as in the tables given above. The percentage marked in each square is supposed to represent a weight placed at the centre of the square. The centre of gravity of all these imaginary weights, *i.e.*, the point on which a thin plate without weight loaded in this way would balance. is then found, by well-known methods. This centre we propose to call the centre of pigmentation.

To find the co-ordinates of the centre of pigmentation let us take as an example the school children, denoted by C in the diagram. To find x take moments about OY, add them together and divide by 100.

$$\begin{aligned}
 x &= \frac{41 \times \frac{1}{2} + 35 \times 1\frac{1}{2} + 24 \times 2\frac{1}{2}}{100} \\
 &= \frac{20\cdot5 + 52\cdot5 + 60}{100} \\
 &= 1\cdot33 \text{ or simply } 133
 \end{aligned}$$

This latter number gives the distance of the centre C from the line OY, the side of a square being taken as 100 units.

$$\begin{aligned}
 y &= \frac{21 \times \frac{1}{2} + 47 \times 1\frac{1}{2} + 7 \times 2\frac{1}{2} + 25 \times 3\frac{1}{2}}{100} \\
 &= \frac{10\cdot5 + 70\cdot5 + 17\cdot5 + 87\cdot5}{100} \\
 &= 1\cdot86 \text{ or simply } 186
 \end{aligned}$$

PIGMENTATION. ABERDEENSHIRE, E.

Y Eyes.

		L	M	D	
F	C	15	8	2	25
	I	10	8		18
	II	13	4	3	20
	III	8			8
	M	6	3		9
R	C	4	2	1	7
	I	2			2
	II	1		1	2
	III	3			3
	M	3	2	1	6
B	C	18	C O 19	10	47
	I	21	I O 15	4	40
	II	10	II O 8	7	25
	III	26	III O 5	11	42
	M	14	37	13	64
D	C	4	6	11	21
	I	2	23	15	40
	II	14	21	18	53
	III	16	13	18	47
	M	2	7	12	21
		C. 41. M. 25	C. 35. M. 49.	C. 24. M. 26	
		I. 35, II. 38, III. 53.	I. 46, II. 33, III. 18	I. 19, II. 29, III. 29	

O

X

This gives the distance of centre C from the line OX, and the position of the point C is completely determined.

On the diagram are marked the positions of the centre of pigmentation for the school children (C); the adults in Group I (I); the adults in Group II (II); the adults at Mintlaw gate (M); the fishermen (III).

We note that (C) lies nearer the fair hair than the centres of the adults. The three groups of rural and town adults have centres (I) (II) and (M) lying fairly close together: the centre (III) of the fishermen shows that they are darker in hair and lighter in eyes than the rural population.

Assuming that the intermediate colours brown and red are due to the admixture of absolutely fair and dark hair, then by means of the centre of pigmentation we may calculate the original percentages of fair and dark hair which would produce the existing colours. We do this by supposing that all the hair is fair and dark, and finding the percentages that would give the same centre of pigmentation. These quantities will be inversely proportional to the distances of the centres of the fair and dark hair from the centre of pigmentation. Thus to find the quantities of fair and dark hair equivalent to the actual hair colours of the school children, the following formula is used:—

$$\begin{aligned}\text{Light hair} &= \frac{186 - 50}{3} \\ &= 45 \text{ per cent.} \\ \text{Dark hair} &= 100 - 45 = 55 \text{ per cent.} \\ \text{Dark eyes} &= \frac{133 - 50}{2} \\ &= 41 \text{ per cent.} \\ \text{Light eyes} &= 100 - 41 = 59 \text{ per cent.}\end{aligned}$$

These numbers do not pretend to be absolute, but they are relatively correct and enable the pigmentation of one population to be compared correctly with that of another. Indeed no method has yet been devised of measuring the absolute pigmentation of hair or eyes. Even if the exact tint was measured by a scientifically designed instrument, it is doubtful whether the amount of pigment obtained by chemical analysis would correspond to these tints.

Our results appear to show that the mean pigmentation of a district when taken from a large number of persons is very constant; when taken over small numbers it is extremely variable, as the maps prepared from the school children show.

A summary of the results obtained at each school and in each parish is given in Table III of the report already quoted (*Trans. Buchan Field Club*, 1897, pp. 7-16). The results are represented in the series of Maps III to XI accompanying this paper (Plates XI, XII); a key map XII being also given.

Map I representing the brunette type in the British Isles after Beddoe, shows Aberdeenshire as one of the least brunette districts. Our results show it as very considerably more brunette than North Germany, where we have only about 7 per cent. of the brunette type. This method of estimating the pigmentation would therefore lead us to the conclusion that the percentage of North German blondes in our population is very small.

Map II shows the distribution of the brunette type on the Continent. The map is drawn to the same scale and is adapted from a map in Ripley's *Races of Europe*. Some parts of Buchan are really darker than anything on the continental map, but this only shows how great the local variations in pigmentation are. It also shows how unreliable small samples are when used to determine the mean pigmentation of a district. The average of the brunette type in Buchan is 20 per cent. This corresponds in Germany most nearly to Upper Bavaria, which is 24 per cent. Belgium, however, has a rather higher percentage of the brunette type than Buchan.

Map III shows the distribution of the brunette type. This type is made up of persons having brown eyes and dark or brown hair. It corresponds almost exactly with Virchow's brunette type, and is therefore valuable for comparison with the results obtained from school children on the Continent. The greatest density of the brunette type is found on the coast at Slains and Aberdour, at both of which places are rocky and inaccessible coasts. East of Fraserburgh the density is lowest on the coast, and here the coast is low and sandy and therefore more likely to be the landing place for blonde invaders from Scandinavia.

Map IV shows the distribution of the mixed blonde type, that is of persons with fair hair and light eyes. Virchow's blonde type contains only persons with blonde hair and blue eyes, and is therefore more restricted than our blondé type, and cannot be compared with it, as we have no means of ascertaining the percentage of pure blue eyes among our light eyes.

Map V shows the distribution of dark hair. As in the case of the brunette type the greatest density is on the most inaccessible parts of the coast.

Map VI shows the distribution of red hair. This lies mainly in two parallel bands running inland from the coast. Roughly speaking, these bands lie between maximum blonde and brunette regions. We have made several attempts to discover the connection between red hair and other hair colours, but without very much success. The best result has been got by dividing the whole district into six nearly equal divisions and finding the mean density of the hair colours in each division. It is found that the red hair is highest where the dark hair is lowest in percentage and *vice versa*. It is also found that the same relation holds between fair and brown hair.

Maps VII and VIII show the distribution of fair hair and brown hair; and Maps IX, X, and XI show the distribution of the three colours of eyes.

These maps have been drawn by means of a kind of contour lines of

pigmentation. The percentage at each school has been looked upon as a height, and contour lines have been drawn with reference to these points. This was considered more accurate than taking the average for parishes, the boundaries of which are purely artificial lines, having no relation to the distribution of the population.

An inspection of the adjacent table will show the difference between the pigmentation of children and adults.

Survey.	Hair.				Eyes.		
	Red.	Fair.	Brown.	Dark.	Dark.	Medium.	Light.
Children ...	7.0	25.3	46.5	21.2	24	35	41
(1) Boys ...	6.8	23.6	48.2	21.4	22.6	35.8	41.6
(2) Girls ...	7.3	26.9	44.7	21.1	25.6	33.8	40.6
Adults (<i>Mintlaw</i>) ...	5.7	9.5	64.1	20.7	26.0	48.6	25.4
(1) Males ...	5.6	9.5	66.2	18.7	22.8	50.9	26.3
(2) Females ...	6.4	9.8	54.8	29.0	39.4	39.0	21.6

It will be observed that there are about $15\frac{1}{2}$ per cent. more fair-haired children than fair-haired adults; and $17\frac{1}{2}$ per cent. less brown-haired children than brown-haired adults. This points to the conclusion that 15 to 16 per cent. of the whole population are transferred from the fair to the brown category in passing from childhood to adult age. It is interesting to find that Virchow estimates that the increase of brown among adults in Germany is 15 per cent.

The table also shows that between boys and girls the percentage of dark hair is practically equal, and the girls have only 3 per cent. excess of dark eyes; but adult females have 11 per cent. more dark hair than adult males, and $16\frac{1}{2}$ per cent. more dark eyes. The darkening of the females is therefore post-natal; and this circumstance may affect the conclusions which we have previously drawn as to the pigmentation of the aboriginal population.

If a population is due to the intermixture of pure blondes and pure brunettes one would expect to find even after many generations the number of heads of fair hair about equal to the pairs of blue or light eyes, except there was some influence that prevented them multiplying at the same rate. We do not, however, find the percentages equal, either here or in Germany. The following table shows the percentages in North Germany, where the Anglo-Saxons are supposed to have come from, and in East Aberdeenshire:—

				Fair hair.	Light eyes.	Brown ¹ hair.	Brown eyes.
Schleswig-Holstein	...	...	...	82	50	18	16
Lüneburg...	...	...	...	83	49	17	18
Mecklenburg-Schwerin	...	...	...	77	49	23	21
East Aberdeenshire	...	...	...	25	41	68	24

In these northern districts of Germany there is always more fair hair than light (blue) eyes, while in East Aberdeenshire the reverse is the case. This might be explained by the fact that our light eyes category is larger than Virchow's blue. But that will not explain the similar discrepancy between the percentages of brown² hair and brown eyes. One possible explanation of the discrepancy is that the immigrants from Germany were not pure blondes, but of a mixed variety with brown hair and blue eyes.

The excess of brown hair over brown eyes is still greater in the case of adults: for instance at the Mintlaw gate we found 85 per cent. brown hair and only 26 per cent. brown (or dark) eyes; and Groups I, II, and III show the same peculiarity, as may be seen by looking at the Pigmentation diagram.

It is interesting to compare the pigmentation of the towns in the district, namely, Peterhead and Fraserburgh, with the average pigmentation of the district. Peterhead, the largest town, is almost exactly the mean of the whole district; Fraserburgh is slightly more blonde, no doubt owing to the proximity of a blonde area on the east.

MEASUREMENTS.

The measurements taken in each case were the height standing, the height sitting; the maximum length and maximum breadth of the head. At the same time a note was made of the colour of the hair and eyes and the profile of the nose. It was also ascertained whether the person himself belonged to the district, or had ancestors who belonged to the district; all aliens were included. The surname of each person was also noted. The measurements of the head were taken in millimetres; the measurements of stature in feet and inches, the equivalents of which in millimetres have been added to the tables.

Table I contains a record of 169 persons, mostly agricultural labourers, measured in the tent at Mintlaw (Group I).

Table II contains a record of 195 persons measured by three different observers. About half of this group were townsmen of Peterhead belonging to the working class. The rest belonged to the rural population (Group II).

¹ "Brown" here includes our categories of "brown" and "black."

² *Brown* here is taken in Virchow's sense, and is practically equal to our *brown* and *dark*.

Table III contains a record of 38 fishermen from the fishing villages on the coasts of Peterhead and Lonmay (Group III).

These tables are to be published in full in the *Transactions of the Buchan Field Club*.

Head measurements.—The method we have adopted to analyse the statistics of head measurements is to plot them out on what may be called a Cephalic Chart. The chart is constructed by dividing a sheet of paper into small squares by a number of equidistant horizontal and vertical lines, the distance between two adjacent lines representing a millimetre. Numbers in millimetres are printed opposite the ends of the spaces between the horizontal and vertical lines. To mark on this chart the position of a head, the length and breadth of the head are used as co-ordinates, the length being measured horizontally and the breadth vertically on the chart. The square determined by the co-ordinates being found, a mark is made therein. Straight lines have been drawn at an angle to the co-ordinates to represent equal cephalic indices, and by means of these the cephalic index of any head plotted on the chart can be determined by inspection. Curved lines (portions of rectangular hyperbolas) have been drawn to represent equal products of length and breadth, or approximately equal areas or volumes. These area factors will be found to be much more efficacious in showing the racial elements of the population we have to deal with in the British Isles than cephalic indexes, since these elements differ very little in cephalic index, but very considerably in area. It may be stated otherwise by saying that the variability of the cephalic index is much less than the variability of the area factors.

Chart I represents the head measurements in Table I, plotted out in the way described above. (Plate XIII.)

Chart II represents the head measurements in Table II. (Plate XIV.)

Chart III represents the head measurements in Table III. (Plate XV.)

Chart IV represents a number of Highlanders measured by Beddoe (*Races of Britain*, p. 234), and is introduced to enable a comparison to be made between the population of the East and West Coasts of Scotland. (Plate XVI.)

On the left hand side of each chart a frequency diagram of breadths is drawn. It forms a kind of projection of the group on a vertical line.

At the bottom of each chart a frequency diagram of lengths is projected in the same way.

In Chart I there are well marked peaks in the breadth diagram at 150 mm. and 155 mm. There are three peaks on the length diagram at 190 mm., 192 mm., and 195 mm. The superficial distribution on the chart enables us to determine which of these lengths and breadths are associated together in the same persons. Points of fairly well-defined maximum frequency occur on the chart at 155, 195; 150, 192; 150, 195.

These peaks may be due to the circumstance that the number of persons dealt with is too small, and the gaps may be filled up when a much larger number of persons is taken.

There would be a strong presumption, however, that these peaks really represent racial elements if they appeared in a chart of another group of people from the same district. In Chart II we have the distribution of a group from the same district, the only difference being that there are a considerable number of townspeople in this second group. Chart II shows in the length diagram the same three peaks at 190, 192, and 195; one of the peaks in the breadth diagram at 150 is also well marked; the peak at 155 is not so well marked, though there are two peaks on each side of it. The same peaks appear also on the surface of the chart. There is, however, a peak at 153, 192 which is not represented on Chart I.

On Chart III owing to the small number (38) we have no well marked peaks, but on the breadth diagram 150 mm., and on the length diagram 195 mm., show up well.

On the chart of the Highlanders the principal peak appears to be at 156, 203, a peak which is not strongly represented on any of the other charts. The favourite breadth among the Highlanders is 152, and the favourite length 203. There is a considerable difference therefore between the head measurements on the east and on the west coasts of Scotland.

Stature.—The average height standing of Group I is 5 feet 8 $\frac{1}{4}$ inches: the average height sitting is 2 feet 11 $\frac{3}{4}$ inches. The same dimensions for Group II are 5 feet 7 $\frac{1}{4}$ inches, and 2 feet 11 $\frac{1}{4}$ inches.

The average height standing of Group II is 1 inch less than the same dimensions of Group I. This reduction of stature is evidently due to the presence of the ninety-one Peterhead townsmen in the Group II; for the average height of the ninety-one is only 5 feet 6 $\frac{1}{2}$ inches.

NOSES.

Each nose was referred to the nearest of the five types specified by the Ethnographical Committee of the British Association:—(1.) Straight. (2.) High Bridge or Roman. (3.) Concave. (4.) Sinuous or Wavy. (5.) Aquiline, Beaked or Jew. Denoting these by the letters S. R. C. W. and J., the following gives the percentages in the different groups where they were noted:—

Group.					S.	R.	C.	W.	J.
Mintlaw gate (males)	...	...	...	...	56	17	17	7	3
" " (females)	...	...	...	...	60	7	27	5	1
Group I	...	...	...	...	66	20	4	8	1
" II	...	...	...	...	66	19	4	9	2
" III	...	...	...	...	63	21	—	16	—

There is a considerably higher percentage of concave noses and lower percentage of Roman noses among the females than among the males observed at the gate of the Mintlaw Gathering.

The percentages of the Groups I and II (all of which are males) are almost exactly equal, but they show more straight and fewer concave noses than the noses at the gate.

The fishermen, Group III, differ considerably from the rural population in this as in most other physical characteristics.

The following are the percentages of straight noses in some neighbouring countries as given by Beddoe, North-West Germany, 23 per cent. ; Denmark, 30 per cent. ; Sweden, 36 per cent. Of concave noses, Beddoe gives for Denmark, 20 per cent. ; and for Sweden, 23 per cent.

Though this belongs more properly to the question of correlation, we may give here the association of hair colours with types of nose in the 2,860 adults observed at the Mintlaw gate. The following table shows the percentage of each colour of hair associated with each type of nose.

Type of Nose.	Hair.			
	Fair.	Red.	Brown.	Dark.
Concave	9·7	4·9	75·2	10·3
Wavy	11·5	3	69	16·5
Roman	8·3	6·3	67	18·6
Straight	9·4	6	63·3	21·4
Jew	8·3	1·7	58·3	31·7

We see from this table that the sum of fair hair and red hair is almost exactly equal for all types of nose (except the Jew), but that the proportion of dark hair varies considerably. The smallest amount is with the concave nose, and the largest with the aquiline or Jew nose. The other types are arranged in the order of increasing percentage.

This distribution of hair colour in relation to types of noses appears to make it highly probable that two dark-haired races, one with the Roman or Jew nose and the other with the straight nose, were among the parent race types of this mixed population ; and also a fair-haired race with a concave nose.

[illegible]

CORRELATIONS.

The correlations between head breadths and heights standing and sitting, and the colour of the hair and eyes, have been worked out for the Groups I and II and are given in the following table. The average height of all persons of a given head breadth has been calculated and is written in the proper column after each breadth. The co-ordinates of the centre of pigmentation for all persons of a given head breadth has also been calculated, and is given under Y_0 and X_0 . From these the equivalent percentages of dark hair and dark eyes have been calculated and written under N. This may be called the percentage of nigrescence, if we may be permitted to borrow the excellent term used by Dr. Beddoe though in a somewhat different sense. The frequencies of each breadth is given in the first two columns, since these would have to be taken into account in calculating averages for two or three breadths. The stature and pigmentation varies so much for single breadths that it appears to be necessary to take averages of two or three to discover any law of correlation that may exist. We have not yet had time to investigate this thoroughly; but there appears to be stature above the mean with the highest and the lowest breadths, and stature below the mean at intermediate breadths.

As to the hair colour, Group I shows maximum co-efficients of nigrescence between breadths 150 and 154 and between 160 and 162. Group II shows maxima between 148 and 150 and between 160 and 162. We have not yet calculated the maxima of the eye colours, but they can easily be determined from the data in the table.

TYPES OR RACIAL ELEMENTS.

We have also calculated the mean heights and percentages of nigrescence for persons grouped around the peaks on the cephalic charts, which we have described above. These are given in the following table. The peaks are marked with circles on the charts and reference letters A, B, C, etc. These are placed in first column and marked I and II to indicate the group. Group III has not been dealt with as the numbers are too small. The numbers in Type I. F. are also rather small to give a reliable result. As a rule, the persons enclosed in a 3 mm. square round the peak have been taken, except when the number was too small, when a larger area was taken.

The uniformity of the stature in Types A, B¹, C in the two groups is remarkable: in the remaining types the agreement is not good. The larger heads are clearly associated with greater stature; *cf.* A, B¹, with C. The types in the two groups do not agree at all well in pigmentation or in noses.

PHYSICAL CHARACTERISTICS OF TYPES OR RACIAL ELEMENTS.

Type.	Mode. B L	Height Standing.		Height Sitting.		Hair.	Eyes.	Noses.					
		ft. in.	mm.	ft. in.	mm.			N.	N.	S.	R.	C.	W.	J.
I. A ...	155 195	5 8	1,727	2 11 $\frac{3}{4}$	907	56	36	60	4	—	13	—	
II. A ...		5 8	1,732	2 11 $\frac{3}{4}$	904	77	57	70	30	—	—	—	
I. B ...	156 203	5 9 $\frac{1}{4}$	1,756	3 0 $\frac{1}{4}$	926	87	61	41	23	—	18	18	
II. B ...		5 7 $\frac{1}{2}$	1,713	3 0	910	58	43	25	37	—	37	—	
I. B ¹ ...	160 200	5 8 $\frac{1}{2}$	1,740	2 11 $\frac{1}{2}$	901	80	60	60	20	—	20	—	
II. B ¹ ...		5 8 $\frac{1}{2}$	1,742	2 11 $\frac{1}{2}$	904	45	33	66	—	—	34	—	
I. C ...	150 192	5 6 $\frac{1}{2}$	1,692	2 11 $\frac{1}{4}$	895	74	28	57	22	14	7	—	
II. C ...		5 6 $\frac{1}{2}$	1,689	2 11	886	70	40	40	50	—	10	—	
I. D ...	150 195	5 8 $\frac{1}{2}$	1,740	2 11 $\frac{1}{4}$	898	39	66	67	11	11	11	—	
II. D ...		5 5 $\frac{3}{4}$	1,668	2 10 $\frac{1}{2}$	877	52	35	28	43	14	14	—	
I. F ...	145 185	5 8 $\frac{3}{4}$	1,749	3 0 $\frac{1}{2}$	927	67	50	50	50	—	—	—	
II. F ...		5 6 $\frac{1}{4}$	1,684	2 10 $\frac{1}{2}$	878	67	50	76	12	—	12	—	
II. ...	152 192	5 8	1,725	2 11 $\frac{1}{2}$	901	61	41	67	8	8	17	—	
Means for whole group.	I.	5 8 $\frac{1}{2}$	1,739	2 11 $\frac{3}{4}$	907	68	41	66	20	4	8	1	
	II.	5 7 $\frac{1}{2}$	1,713	2 11 $\frac{1}{2}$	900	70	45	66	79	4	9	2	

AFFINITIES.

In order to discover affinities to our types we have taken (chiefly from Beddoe's *Races of Britain*) average head dimensions corresponding as nearly as possible to the dimensions of our types. In cases where skulls only are available they have been converted into heads by adding 8 mm. to the breadth and 10 mm. to the length, these measurements of skin thickness being obtained from an actual subject, and of course only approximately correct in some cases.

Averages of known heads.	Breadth Length.		Types from Groups I and II.	Breadth Length.
	Skulls.	Heads.		
S. Somerset		151 192	Type C	150 192
Danes		157 195	Type A	155 195
Hanoverians		159 201	Type B ¹	160 200
W. Somerset and S. Wales...		151 195	Type D	150 195
Bronze age skull—				
[Banffshire (<i>Cr. Brit.</i>)] ...	157 185	165 195		
Long Barrow men—				
[mean of 27 (<i>Cr. Brit.</i>)] ...	142 126	150 206		

The stature of Bronze age men is given by Thurman as 5 feet 9 $\frac{1}{4}$ inches and by Munro as 5 feet 8 $\frac{1}{2}$ inches. This corresponds well with our Type B¹, which have also broad skulls.

The stature of the Neolithic or Long Barrow men is usually given as 5 feet 5 $\frac{1}{2}$ inches, rather less than our Type C. The breadth of Type C agrees with that of the Long Barrow heads, but there are no heads on the charts having both the length and breadth of the Long Barrow skulls. The same may be said about the Bronze age heads, but their length, 195, forms one of the principal peaks in the frequency diagrams of lengths.

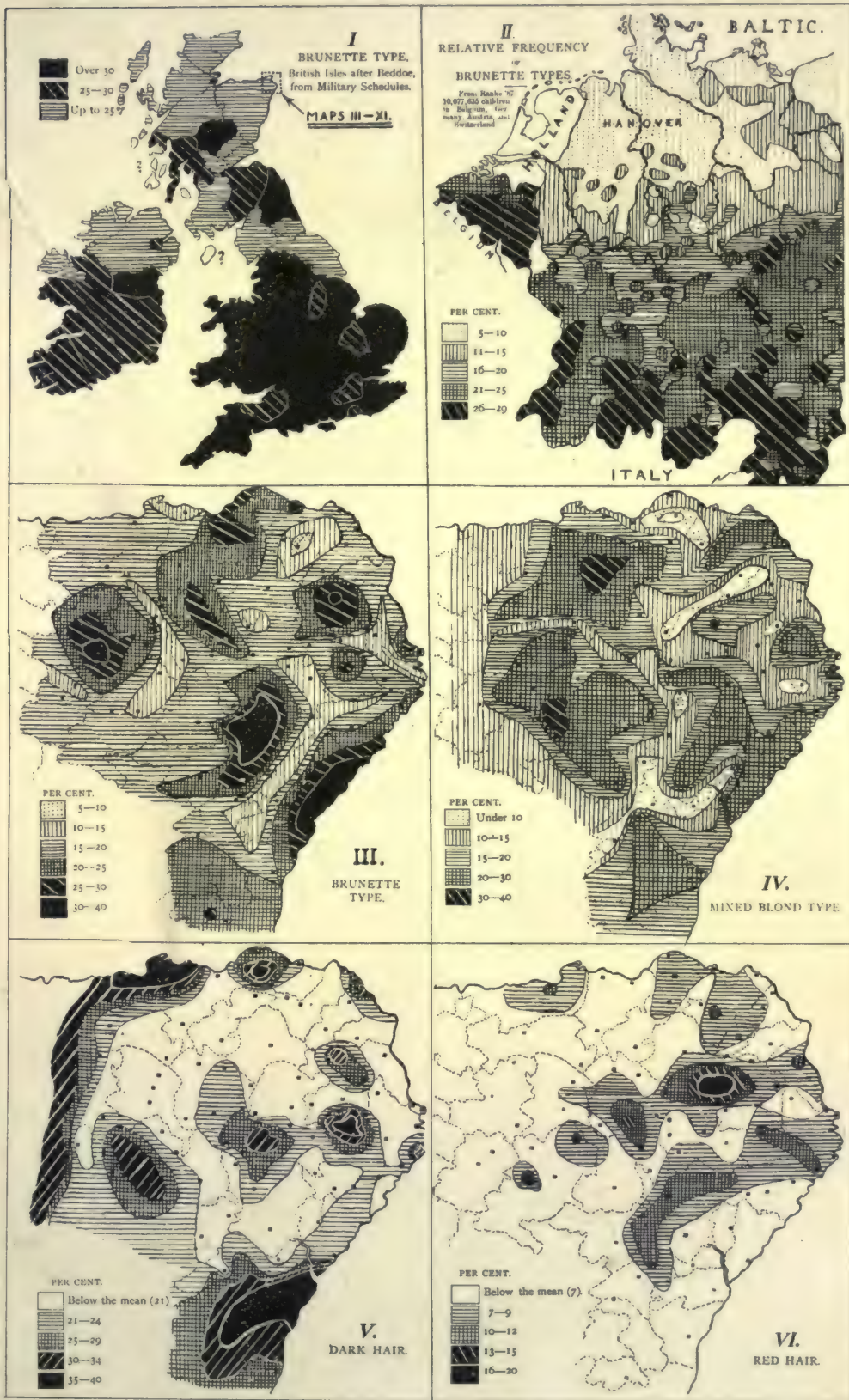
CONCLUSIONS.

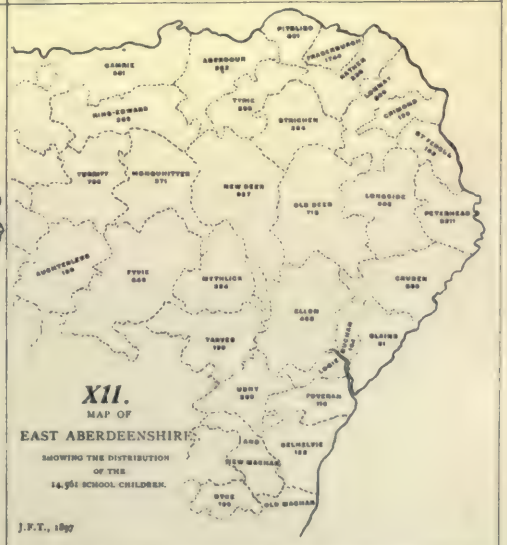
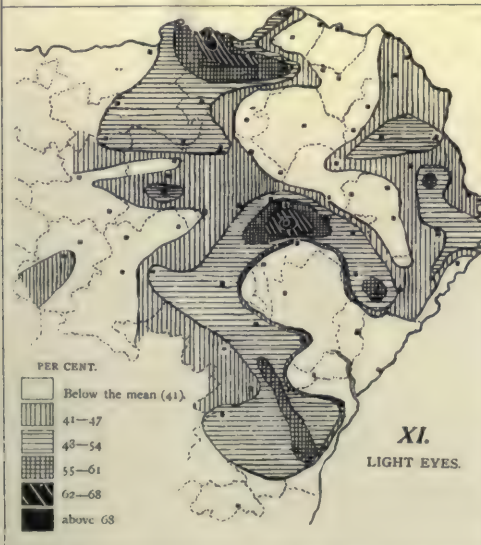
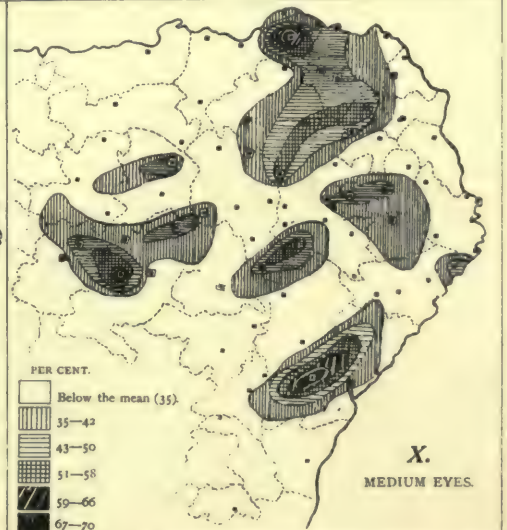
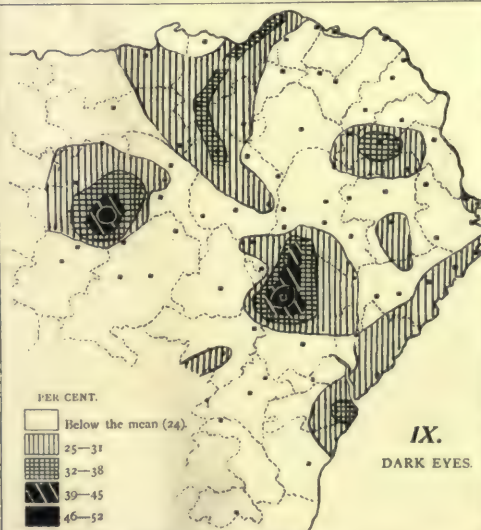
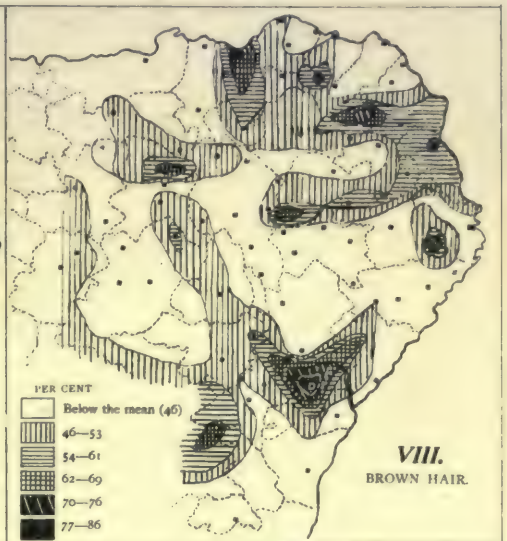
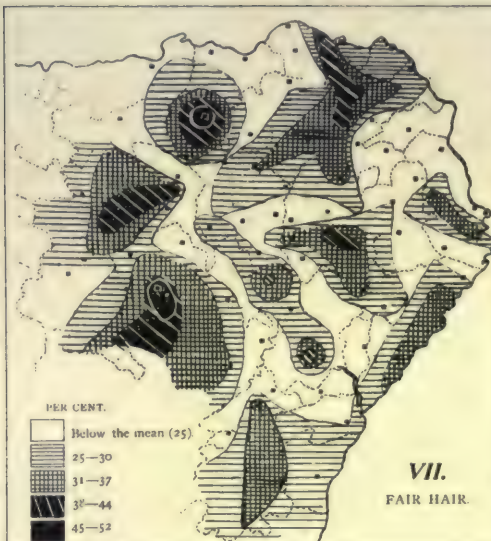
Far more complete statistics of the physical characteristics of the people of the British Isles are necessary before we can arrive at any certain conclusions as to the affinities and origin of the people dealt with in this paper. As to neighbouring countries, general treatises on the anthropology of Europe generally supply us only with cephalic indices. What measurements we have got show that there is very little difference in the cephalic indices of the racial elements of our population, but there is a very considerable difference in the absolute dimensions or their product. Comparisons will, therefore, have to be made on the absolute system. This we have not yet been able to do by examining original memoirs.

It is interesting to note that the head breadth of the Neolithic men, 150 mm., and the length of the Bronze age men, 195 mm., are still dimensions of maximum

frequency among the people of East Aberdeenshire, though there are no heads corresponding in both dimensions to these prehistoric types. Does this indicate that our population contains intermediate types evolved from their intermixture?

One pretty certain conclusion can be drawn from a comparison of the pigmentation of our school children with those of North Germany, namely, that we have a very much smaller percentage of this blonde element than has been generally supposed. The excess of brown hair over brown eyes in our case appears to be also a significant distinction. When a pigmentation survey of the school children has been carried out over the whole kingdom, we shall know a great deal better what these differences mean.

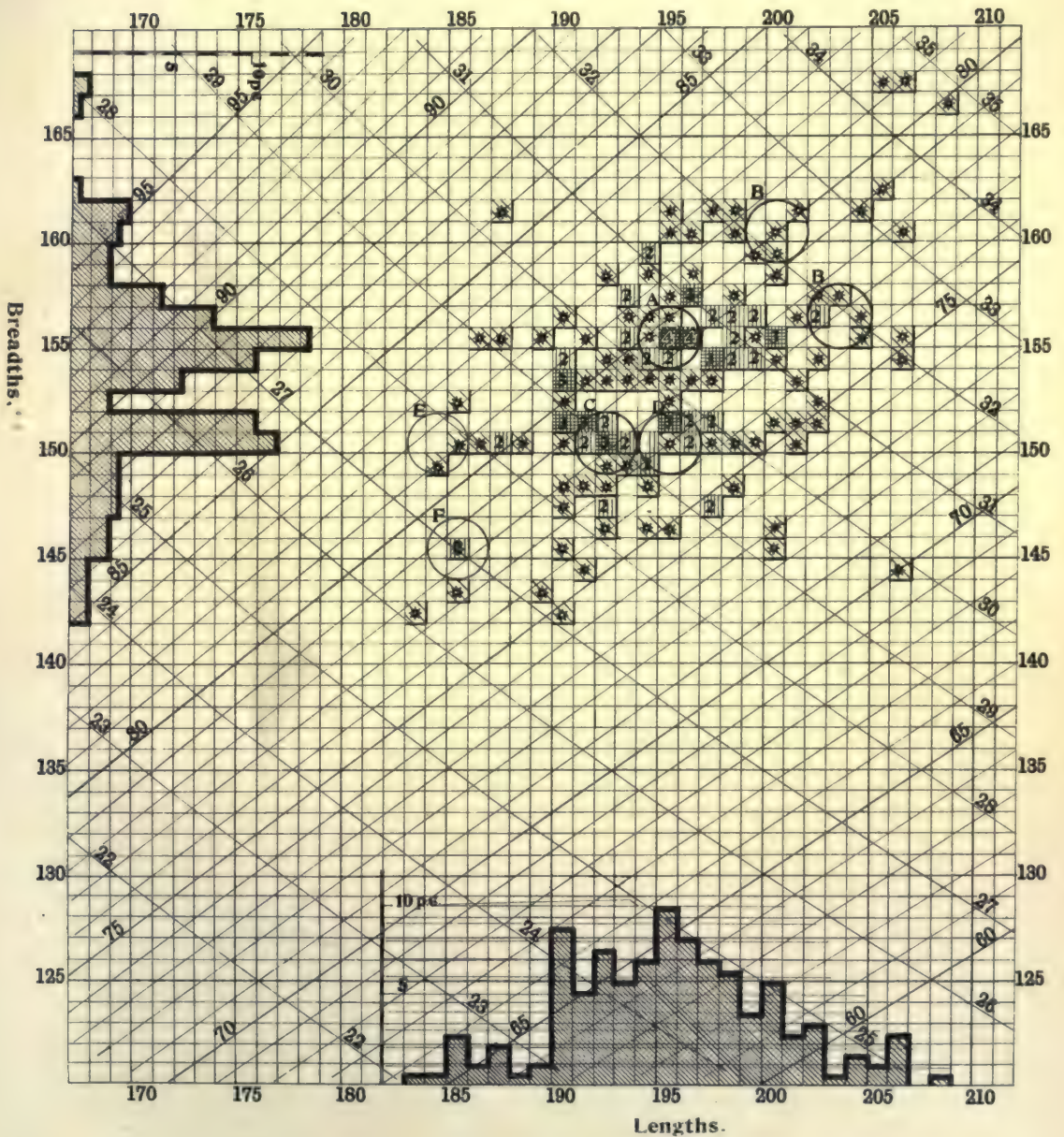




CEPHALIC CHART.

SCOTLAND, Aberdeenshire, E.

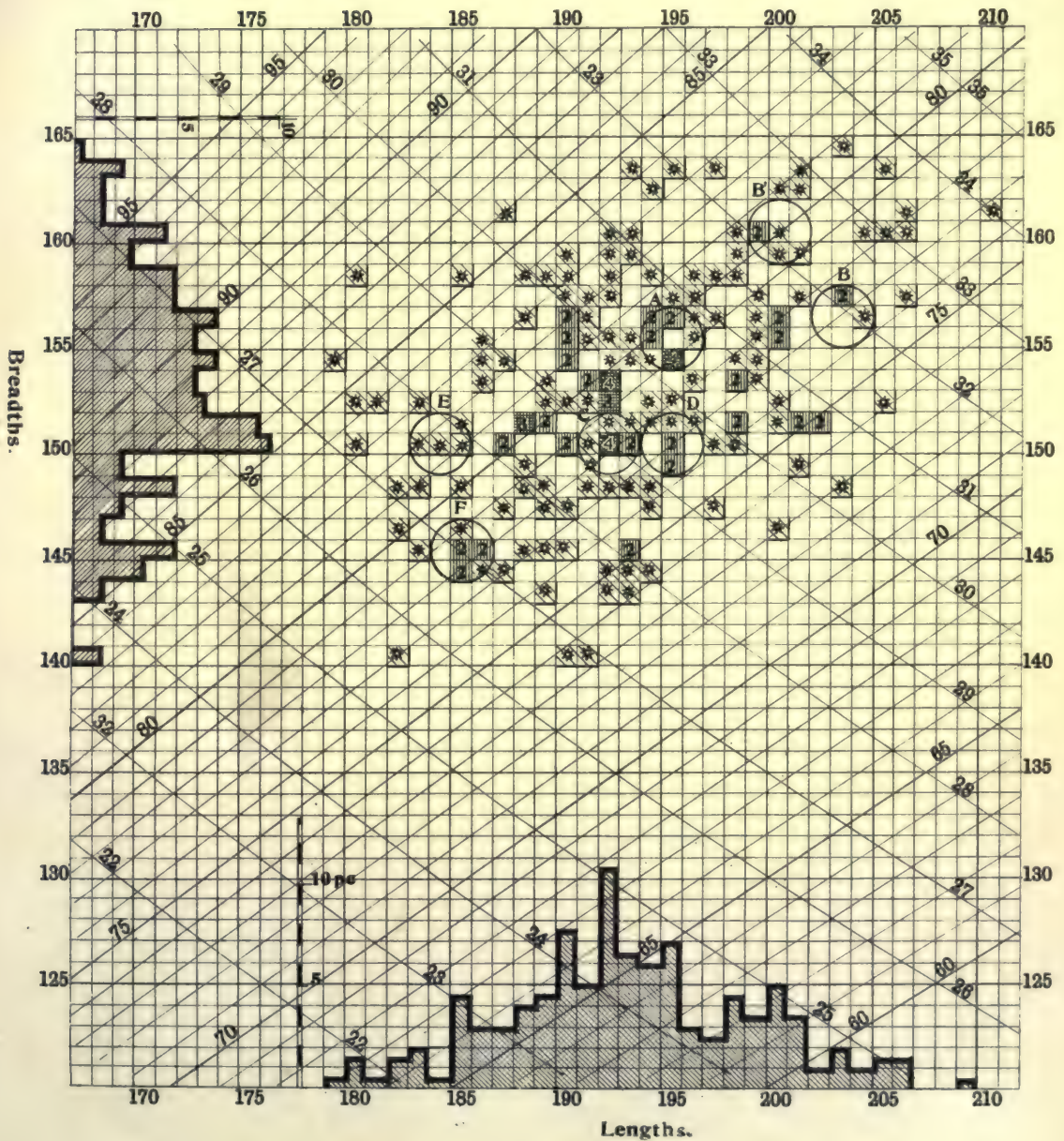
Table I. 169 Persons.



CEPHALIC CHART.

SCOTLAND, Aberdeenshire, E.

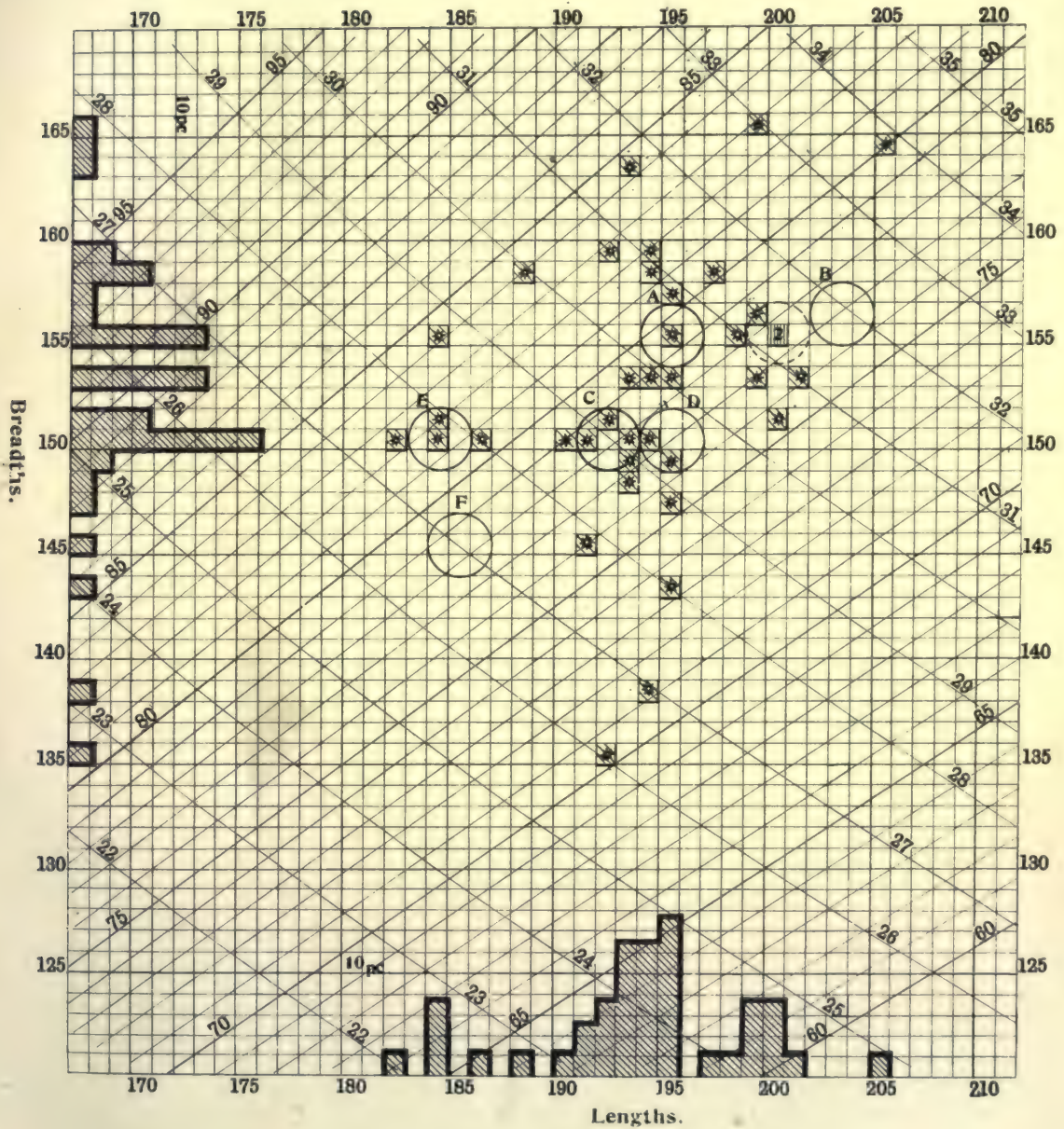
Table II. 195 Persons.





CEPHALIC CHART.

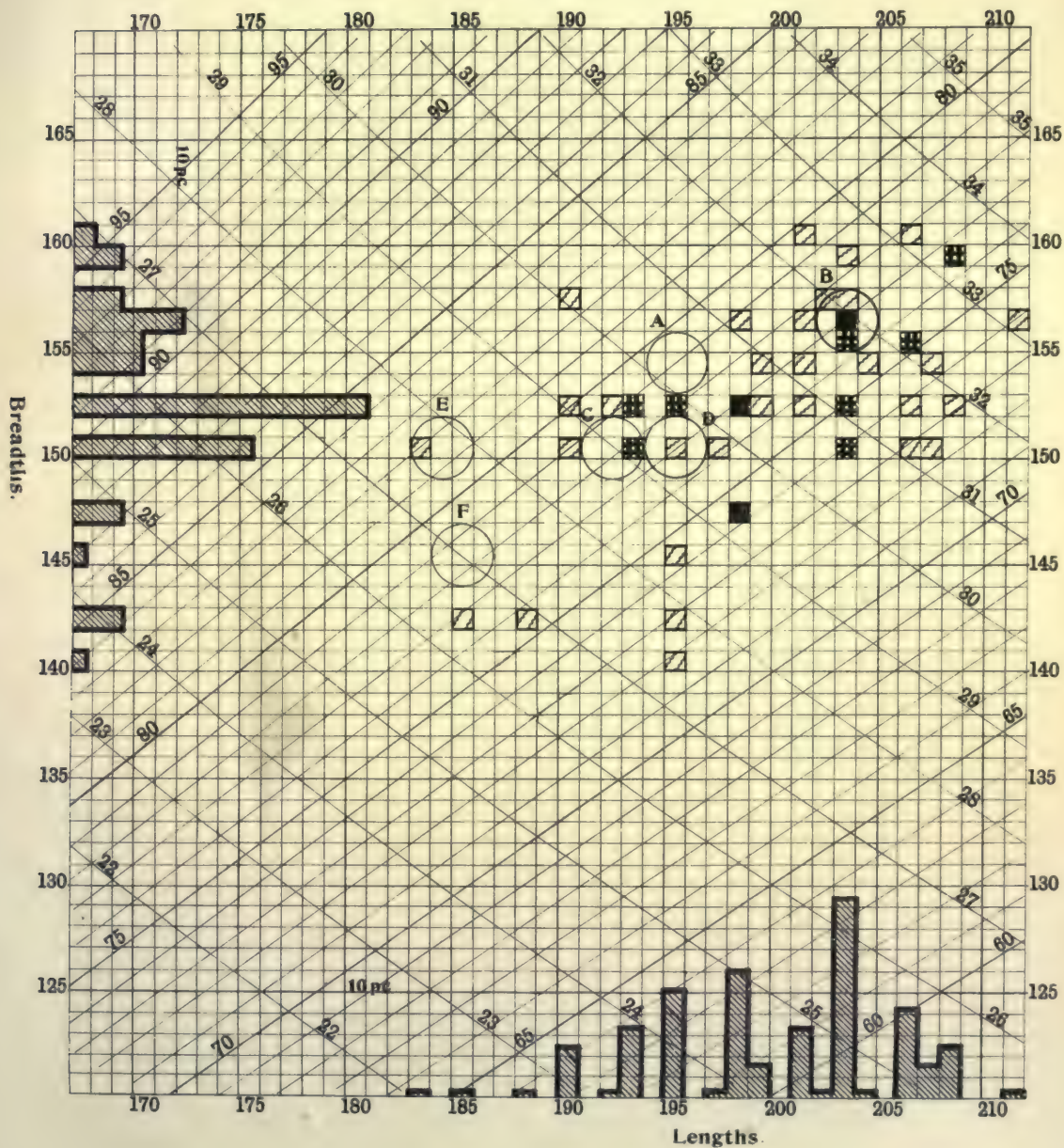
**SCOTLAND, Aberdeenshire, E.
38 Fishermen. Table III.**



CEPHALIC CHART.

SCOTLAND.

57 Highlanders. IV.



A CONTRIBUTION TO ESKIMO CRANIOLOGY.

BY W. L. H. DUCKWORTH, M.A., AND B. H. PAIN, B.A.

(From the Anthropological Laboratory, Cambridge.)

[READ JUNE 12TH, 1900. WITH PLATES XVII AND XVIII.]

IN the course of the winter of 1899-1900, a number of Eskimo were exhibited in London at Olympia, and owing to the kindness of Mr. Taber, the manager of this part of the exhibition, we were enabled to obtain measurements of the individuals of the party.

A description of these Eskimo and of the tables of the measurements was communicated by us to the Cambridge Philosophical Society, in the Proceedings of which (March, 1900) the account will be found.

The measurements afforded us the means of drawing to scale a diagrammatic figure representing the average male adult Eskimo, and this figure was then sufficiently reduced to bring it into line with those published by Professor Thomson, of Oxford, in *Knowledge*, June 1st, 1899. In Fig. 1, our diagram for the adult male Eskimo (*a*), will be found compared with corresponding diagrams for adult males of (*b*) Anglo-Saxon, (*c*) Negro and (*d*) of aboriginal Australian origin.

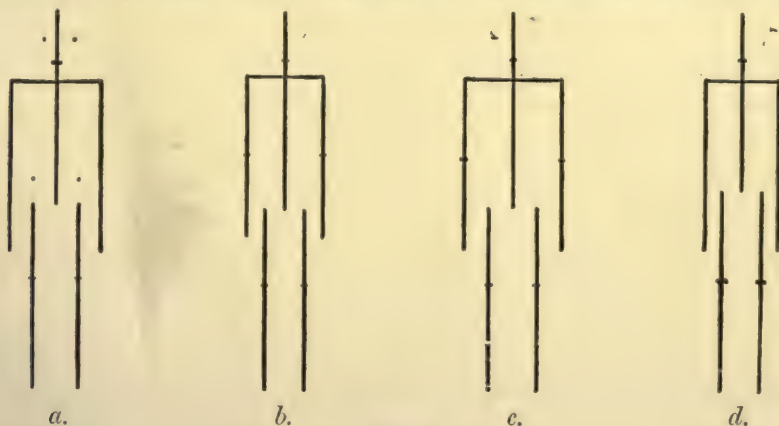


FIG. 1.

The remainder of the former communication consists of notes on the conditions of Eskimo life in Labrador, the native land of the individuals in question, and of comments on the general results of our observations in the light of records published by earlier workers (especially Virchow and Boas). It would be superfluous to recapitulate the conclusions arrived at, and in the present communication an attempt is made to determine the relations subsisting between the head and skull of the Eskimo, so as to obtain some idea of the

modifying effect on cranial form and contour to be attributed to the overlying soft tissues. In the second place, we have summarised observations on a large number of Eskimo crania which were studied by one of us in several European museums. Lastly, we propose to record without comment notes furnished by Mr. Taber on the Eskimo of Labrador which are not specially of the nature of observations on their physical conformation.

COMPARISON OF THE FORM OF THE HEAD WITH THAT OF THE SKULL OF THE ESKIMO.

Dealing in the first instance, then, with the comparison of the forms of the head and of the skull respectively, we naturally turn to the tables of measurements, and in the first place it is convenient to consider some absolute linear dimensions, without reference to the indices which are derived from them.

Number of Subjects measured.—From our measurements of the heads of the Labrador Eskimo, we obtained averages resulting from observations and records of eleven of the chief dimensions; and the material on which the observations were made consisted of eleven adult males and ten adult females, the measurements in the two sexes being treated of independently. (Table I.)

Number of Crania available.—In determining the corresponding dimensions of the Eskimo skull, we selected as many skulls of Labrador Eskimo as possible, supplementing the limited number of these by skulls of Greenland Eskimo. In this way we obtained averages based on observations of a number of crania of Eastern Eskimo varying from twenty and seventeen in the case of adult males, and from eight to eleven adult females (it was not possible at the time to obtain more undoubted female skulls than these).

The most important points in the accompanying Table (No. I), to which attention should be drawn, are as follows:—Firstly, the length of the head is absolutely great both in males and females; and the same holds good with regard to the breadth of the head in the males, in whom also the facial dimensions are of absolutely great size, both as regards the nasi-alveolar length and the bizygomatic breadth. The great size of the head is indicated also by the large figure representing the average horizontal circumference. Other comments on the dimensions recorded in Table I will be made in connection with the indices, and it is now necessary to note the results of a comparison of the average dimensions of the head and of the skull respectively in the two sexes. (Table IA.)

The Head and the Skull compared in respect of Maximum Length.—As the Table IA shows, great approximation is observed in the case of the maximum lengths of head and skull among the males, the average length of the head being 191.15 mm.; and that of the skull 190 mm. From these figures it follows that the thickness of the soft parts overlying the skull of the living subject is but 1.15 mm., or .575 mm. in front and an equal amount at the occiput, supposing the thickness to be the same in each case (which is not, of course, actually true). But such a

margin as 1.15 mm. is quite inadequate, and the only conclusion is that there is an error in the determinations. It may be that the figure 190 mm. is too high for a correct representation of the average skull-length, or that 191.15 mm. is too low to serve as a proper representative of the head-length, or else, what is probably the case here, both these contingencies coexist. We are led to this conclusion from the consideration of the records made by Virchow (*Zeitschrift für Ethnologie*, Bd. xii), for on combining with our figures those recorded by Virchow, we are enabled to calculate the average head-length of fourteen adult Labrador Eskimo, and this is found to be 192.4 mm. in place of 191.15. So that had we as many heads available for study as we had skulls (*i.e.*, 20), the difference between the average head-length and the average skull-length would probably be still greater. Moreover, two of the Labrador skulls measured were weathered to a considerable degree and to some extent had been flattened; these skulls yielded figures which denote a greater horizontal length than the skulls originally possessed, and therefore helped, no doubt, to raise the value of the average skull-length to the high figure which actually represents it.

In the case of the collection of data referring to female heads and skulls (Table IA) a very much greater discrepancy between these two dimensions will be found to obtain on the average. Herein the head-length is probably too great, and indeed we were conscious at the time of making the measurements that this was the case, for the thick growth of hair and the manner of plaiting and of arranging it generally interfered to a considerable extent with the attempts to record the head-length with accuracy.

Nasi-alveolar (or Upper Facial) Length.—A noteworthy approximation is observed in the case of the nasi-alveolar length as measured on the head, when it is compared with the corresponding dimension of the skull. In the living subject the alveolar point, being superficial, is not hard to determine, but there is generally some difficulty in ascertaining the exact situation of the nasion. This difficulty is particularly great in the Mongolian races and their allies, in which category we may provisionally place the Eskimo, and the difficulty is not always overcome even by close attention to the careful instructions of Topinard.

The Orbit.—Close approximation is observed in the case of the orbital diameters in the males, though this is not the case in the females so far as orbital width is concerned. The effect of this upon the orbital index will be realised subsequently. The modifying cause is probably a greater thickness of the subcutaneous tissues and a greater adipose deposit in this region in the female.

Horizontal Circumference.—The figures representing the horizontal circumference of head and skull require mention solely in order to indicate that the great excess of this dimension of the head over the corresponding measurement of the skull in the females is almost certainly due to the same influence as was mentioned with reference to the length of the head in females, *viz.*, the amount and the mode of dressing the hair. It follows that the figure relating to the head is rather too great.

The Nose.—The nose and its dimensions next claim our attention. In both sexes the nasal height measured on the living subject approximates closely to the corresponding dimension as measured on the skull; but in respect of nasal width a most remarkable difference exists, and is attributable not only to the expansion of the alæ nasi in the case of the head, but also and more characteristically to the narrowness of the apertura pyriformis nasi of the skull. (As will be mentioned in another connection, a nasal index of 32·7 has been observed by one of us in a Greenlander skull.) We have supplemented the foregoing discussion of the measurements by diagrams drawn to scale on quadrille paper, and embodying all the dimensions observed by us which can be studied in norma facialis (Figs. 2, 3). In preparing the diagrams, which are half the actual size of the originals, the average values of the maximum breadth of head and skull for the two sexes respectively were first marked. Outlines from photographs of male and female Eskimo skulls were then used as guides in the completion of the contours, which are thus those of the photographs mentioned, but modified in accordance with the values obtained for the several dimensions. It must be noted that the average value of the bigonial breadth has been made use of, but as this was determined on the living persons only and not on crania, no discussion on this part of the subject is possible.

Indices.—We may now pass on to the subject of cranial indices, and we must in the first place compare those based on the average dimensions of the Eskimo head with those which are derived from the average dimensions of the skull in this race. And inasmuch as our own observations relate to two series of skulls, one being the Cambridge series, and the other that of the museum of the Royal College of Surgeons in London, we have combined data from both these collections in order to arrive at an average value for each dimension based on a sufficiently large number of individual records. But it is necessary to state very explicitly that three sets of data are to be kept quite apart and distinct for the very sufficient reason that in this *combined* series of indices (based on the study of male and female crania in both collections), the data relating to each sex are kept entirely apart; whereas in two other series of averages, referred to hereinafter as the College of Surgeons series and the Cambridge series respectively, the average figures are derived from observations on males and females without distinction. We will therefore first take Table No. II, where the data for male skulls are kept distinct from those relating to female crania. Our measurements enabled us to determine the indices of the averages in five sets of dimensions, so as to afford average figures for five indices. It is perhaps hardly necessary to mention that this gives a slightly different result from a simple determination of the average of the indices. The indices are as follow:—The cephalic or breadth index (the maximum length and *not* the ophryo-occipital length of the head or skull being employed), the facial index of Kollmann (nasi-alveolar facial length and bizygomatic facial breadth), the naso-malar index of Oldfield Thomas (jugo-nasal arc and chord), the orbital and the nasal indices (of Broca).

Correspondence of Indices of Head with Skull in Males, compared with correspondence of the same Indices in Females.—We find a slight difference between the sexes when we compare the correspondences and the divergences of the indices in the head and skull respectively. For instance, the sexes differ when the breadth index is in question, but they agree in respect of the orbital and the nasal indices, and on the whole the agreements are greater than the differences.

The Males alone.—If we consider the males alone, we shall find that the facial and the naso-malar indices reveal, by their similarity in head and skull, a close agreement as regards the proportions expressed by those indices, from which we argue that these indices, when obtained from measurements of crania, afford relatively reliable information as to the proportions of the face in the particular race under consideration (the Eskimo). Especially is this the case with Kollmann's facial index. It must not, however, be forgotten that these remarks refer to the case of the average and not to that of the individual example. In the next place, but always treating of the males alone, the breadth, the orbital, and the nasal indices yield average values more or less different in the head and the skull respectively, the greatest divergence being presented by the nasal index. Reverting to the breadth index, we see that the figure for the Eskimo head (77), differs from that of the skull (71.5) by no less than 5.5 units. The difference is estimated by Boas (*Zeitschrift für Ethnologie*, 1895, Band xxvii) at 2.2 units for the Eastern Eskimo, and though this figure appears to us to be too low, yet we think that 5.5 is undoubtedly too high. In fact, this difference is influenced by the two factors mentioned previously in discussing the relation of the maximum length of the head to the maximum length measured upon the skull. We there saw that our observations in the case of the head yielded a figure (191.15 mm.) probably below the true average, whereas the corresponding measurements on the skull gave (in consequence of two weathered skulls being admitted) too high an average figure (190 mm.). Both influences determine the magnitude of the difference of 5.5 which we are now discussing, but the study of the indices shows us that inasmuch as the average breadth index of the skull obtained by us agrees closely with those obtained by earlier observers,¹ we should therefore attribute a more prominent part to the former (viz., the measurement of the length of the head in the living) than to the latter (viz., the measurement of the length of the skull) in producing the discrepancy in question, and Bordier's record (Topinard, *op. cit.*, p. 409, average index of four Eskimo heads 73.7) supports this conclusion. In other words, the difference observed between the cephalic indices of the average head and of the average skull is greater than is probably the case in reality; and it is probably due to the fact that the figure (77) representing this index for the average head is too great, and not so much to the fact that the figure (71.5) which is the index for the average skull is too small.

¹ Cf. Topinard, *Éléments d'Anthropologie Générale*, p. 357, De Quatrefages and Hamy (*Crania Ethnica*, average breadth index of two Eskimo skulls from Labrador in the Blumenbach collection, 70.5), also Boas, *loc. cit.*, and Schenk (*Bulletin de la Soc. Neuchâtel: de Géographie*, 1899).

Orbital Index.—In the two remaining indices, differences of considerable degree are also found to exist when the figures relating to the average head are compared with those yielded by the average skull. This difference in the case of the orbital index is probably determined by the slight inaccuracy in determining the width or horizontal diameter of the orbit in the living subject. As a rule it is almost impossible to determine this diameter in a way strictly comparable to that employed when the skull is being measured. Males and females are alike in respect of this difference in the orbital index, and the disturbing cause is probably the same in both.

Nasal Index.—As regards the nasal index, we find here, as we should expect, the greatest difference between the cephalic and the cranial figures, amounting to nearly 19 units. As was previously remarked, there is a great difference between the nasal width as measured on the living subject and the width of the apertura pyriformis nasi, known as the nasal width of the skull.

Female Examples.—The preceding remarks refer to male subjects. When we pass to the consideration of the female crania, we find in respect of the cephalic or breadth index a much closer agreement between the average head and skull than in the male. It must be remembered that we are dealing with very small numbers of specimens here, as undoubted female Eskimo skulls, especially from Labrador, are scarce. Carr's figures, quoted by Topinard (*op. cit.*, p. 376), give a figure (70.9) considerably below ours (73.1), so that we cannot suppose that the sexual factor is accountable for the difference between the average male and the average female skull in respect of the breadth index as shown in our table. We think that further discussion will be more profitable when a larger number of female heads and of female crania have been measured, and the results will almost certainly show that the correction necessary to obtain the cephalic index of the living individual from the index yielded by the skull will be different in the two sexes. Such an allowance for the sexual factor is made in other instances by Mies (see Ripley, *L'Anthropologie*, 1896, and Topinard, *op. cit.*, list of references, p. 374).

With regard to the facial index, it is equally hard to explain the discrepancy that exists between the average female head and skull. Most probably the determination of the nasi-alveolar length in the living is the disturbing factor. The remarks already made with respect to the naso-malar, to the orbital, and to the nasal indices in the males apply equally to the females and need no supplement in this place.

Other Series of Measurements and Records.—It remains to mention the results of our measurements of the Eskimo crania in the museum of the Royal College of Surgeons and of those in the Cambridge Anatomical Museum. We may repeat the warning that the figures we are now considering relate to all Eskimo crania, male and female alike, in each of those collections, whereas up to this point we have kept the data based on observations on male crania apart from those yielded by female skulls. We have, moreover, in the case of the series at the museum of the College of Surgeons, a larger number of individuals than was available

for the construction of Table IA, on which to base our conclusions; and at Cambridge skulls from Labrador form a very large proportion of the whole series. The data enable us to calculate the five average indices already spoken of in connection with the measurements of the head (viz., the cephalic or breadth index, the facial index of Kollmann, the naso-malar index of Oldfield Thomas, the orbital index of Broca, and the nasal index of Broca). We will first institute comparisons of the cephalic or breadth index of the skulls in the museum of the Royal College of Surgeons comprising males and females, with the same index derived from the study of male skulls alone (from the College of Surgeons and from Cambridge). We see (Table III) that when male skulls alone are considered the index of the average (71.5) is slightly lower than the average of all the Cambridge skulls (eleven in number) measured; while it is distinctly below that (72.03) of the males and females measured at the College of Surgeons (twenty-four in number). In the whole series of comparisons the differences do not exceed 2.5 units, except in the case of the facial index of Kollmann, where the difference amounts to 3.18 units. But the disturbing series is that at Cambridge, and the modifying factor is almost certainly the index given by an adult female skull (1872) which amounts to the unusually high figure of 62.3; and since only six skulls of this series were available for the determination of this particular index, the influence of a single index of such high value is brought out very strongly in the average. On the whole, then, we conclude that the records of Table II amount to a very close approximation to the actual state of cranial proportions in the Eastern group of the Eskimo. We have also analysed the cranial characters of the Labrador Eskimo as represented by the specimens presented by Dr. Curwen to the Cambridge Anatomical Museum; we have carefully revised the measurements of these skulls (published by one of us in 1895 in the *Journal of the Anthropological Institute*) and the indices derived from the measurements, and in working out the averages of the indices obtained, it became apparent that the greatest divergences from the averages were met with in the skulls of the Labrador Eskimo, and not among the skulls of the Greenland Eskimo. Not only was the greatest divergence in the averages found in the cephalic, vertical, and nasal indices, and also in the horizontal circumference of the Labrador Eskimo skull, but in the ten specimens which comprise the series, the Labrador skulls were the most divergent from one another. In the cephalic index this was most striking, the highest index of all the ten skulls being provided by a Labrador skull with an index of 75.4, and the lowest of all the ten skulls being that of a Labrador skull with an index of only 65.8. Again, considering the horizontal circumference in the series of ten skulls, the largest circumference (of 550 mm.) is that of a Labrador skull, and the smallest circumference (476 mm.) is also that of a skull from Labrador. A similar variation was found in the facial index of Kollmann—the average was 54.36, but the greatest index above this number was that of a Labrador Eskimo skull (index = 62.3). So the point which seems to be worth emphasising is this: that in comparing Labrador and

Greenland Eskimo, the greatest divergences are to be met with in the crania of Labrador Eskimo, and that the crania of the Greenland Eskimo are more constant in the particular features observed.

The actual figures and the average indices will be found in Table IV (*q.v.*).

CERTAIN CRANIOLOGICAL CHARACTERS OF THE ESKIMO.

The second part of our communication deals, as has been previously intimated, with certain craniological features of the Eskimo as viewed in the light of observations incidentally made in the course of the foregoing investigations. The following are those to which special attention has been paid:—

The scaphocephalic character of the Eskimo cranium;

The frequency of a persistent infra-orbital suture;

The asymmetry of the foramen magnum;

The usage of the teeth, especially of the incisors;

The thickening of the body of the mandible;

The characters of the skull of the Eskimo child;

and the percentage frequency of several of these will be found in Table V.

Scaphoid Skulls and Obliteration of Sutures.—It is well known that a scaphoid appearance of the cranium (most easily perceptible when the view is that of norma facialis or occipitalis) is very common in Eskimo crania; and whereas such a degree of scaphocephaly is very commonly (but by no means invariably) associated with obliteration, either partial or complete, of the sagittal suture in the skulls of other races, such synostotic fusion of the two parietal bones is in the Eskimo crania not nearly so common as in those of other races. An extreme degree of development of the scaphoid character is to be seen in the skull labelled A.B., δ , 15, 141, of the collection in the Anatomy School at Copenhagen, and this skull presents no sign of even incipient obliteration of the sagittal suture. We have tested the accuracy of the statement, as regards Eskimo crania in general, by observations on twenty-eight crania of Eskimo in the museum of the College of Surgeons in London. In eleven of these the scaphoid character was strongly marked, but only in one of the eleven was there anything more than quite a negligible amount of sagittal synostosis. Other very good examples of the degree of scaphocephaly which may be attained before the sagittal suture has become obliterated is to be observed in the cranium No. 48A of the Anatomical Museum at Kiel, and in an Eskimo skull at Halle. In this Eskimo cranium, obliteration of the sagittal suture is incipient only. The other three crania on the same negative (Fig. 4), though not Eskimo, are not without interest, as showing the absence of the scaphoid character of the cranial vault in specimens in which the sagittal suture had become obliterated at an early (and in one case at an almost infantile) period.¹ This is a convenient place to mention that in contrast to the foregoing condition, where the sagittal suture remains unclosed, and also to the next subject

¹ We thus have evidence that Virchow's well-known generalisation on this subject is not without exceptions.

of consideration, viz., the persistence of the infra-orbital suture on the facial aspect of the cranium, there may occur in aged individuals a very complete synostosis even among the Eskimo. Such an aged skull is to be seen in the Stuttgart Museum. In this specimen synostosis has occurred even in the maxillo-malar suture, which has been obliterated thereby.

Infra-orbital Suture.—The comparatively great frequency with which the facial part of the infra-orbital suture persists in adults seems to be another characteristic of Eskimo crania. The following data have been collected by us in illustration of the frequency of this occurrence:—

In the very large collection of skulls of the Greenland Eskimo in the anatomical museum of the University at Copenhagen, one hundred and eighty-five examples were examined, and the suture found in eighty-one skulls on one or the other side of the face. Of the collection of Eskimo crania in the museum of the Royal College of Surgeons in London, twenty-four were examined, and nineteen showed persistence of the suture, in fifteen of which the persistence was bilateral, the suture remaining on one side only in the other four specimens. Combining the two sets of observations, we may say that the suture persisted in one hundred out of two hundred and nine crania of Eskimo adults.

It would seem from observations on crania of the gorilla that persistence of the suture may be associated with great lateral expansion of the upper maxilla, for in the crania of gorillas the suture persists for a considerable time: the well-known characteristic of Eskimo skulls, viz., great bi-malar width, would thus be explained. But this is not an entirely satisfactory explanation, for in the orang-utan, an ape in which there is at least as great a development of the upper maxilla in the lateral direction, as in the gorilla, the infra-orbital suture is closed comparatively very early.

The Contour of the Foramen Magnum.—The foramen magnum and its surroundings next claim attention. The pyriform shape due to imperfect ossification at the posterior margin is a very frequent character, though it is perhaps hardly correct to speak of it as an anomaly, for it is apparently a retention of the infantile character of this foramen. It was observed in nine out of twenty-four skulls in the museum of the Royal College of Surgeons, and in four out of eleven cases at Cambridge. Asymmetry of the marginal contour is also not uncommon; sometimes the condyles are associated, involved in the distortion. At Copenhagen two hundred and nine Eskimo crania were examined with reference to the occurrence of asymmetry in the margin of the foramen magnum, and three instances of this condition occurred. At the museum of the Royal College of Surgeons the frequency of this asymmetry in Eskimo skulls was much greater, viz., four cases among twenty-eight crania. Combining the two sets of data, the frequency observed is seven in two hundred and thirty-seven crania.

Additional Facet on margin of Foramen Magnum.—As regards the frequency of occurrence of an additional articular facet on the anterior margin of the foramen magnum, this was presented by three skulls only out of one

hundred and eighty-five crania of Greenland Eskimo (Copenhagen collection) examined.

Eustachian Processes.—It is convenient to mention in this place that two out of fifty-five Eskimo skulls (at Copenhagen) bear large Eustachian processes on the petrous bones on either side (such processes being commoner in the lower than in the higher races, and not infrequent in gorilla skulls).

The Teeth.—The following notes refer to the condition of the teeth:—Among the Eskimo skulls in the Copenhagen collection, the appearance described long ago (1861, *Nat. Hist. Review*) by Lord Avebury as characteristic of Greenlanders is not met with very frequently. The Copenhagen skulls are mentioned separately as being those of Greenlanders, but the appearance referred to (the incisors meeting edge to edge and the surface becoming much worn) is not frequent among the Eskimo crania in the collections in London and Cambridge, including crania from Labrador. In one skull at Copenhagen the lateral incisors had not been developed, although the skull was that of an adult. The palate in this specimen is wide and the teeth large. In three crania of the same Eskimo series, and also (and especially) in the Eskimo skull No. 48A of the anatomical collection at Kiel (the specimen figured in connection with synostosis and scaphocephaly), the same curious dislocation of the molars so frequent among Maori and Mori-ori skulls (where there is great usage of the lateral surface of the crown and of the exposed root or roots) is observed (*cf.* Scott, *Trans. N. Zealand Institute*, 1893; and W. L. H. Duckworth, this *Journal*).

Thickening of the Mandible.—The next point to which we must refer is a remarkable thickening of the body of the mandible, not exclusively confined to, but very common in, Eskimo and Greenland crania. The thickening is most marked about the level of the second molar tooth, and is due to a subperiosteal deposit, the exciting cause of which is uncertain. This thickening was observed in six out of twenty-four Eskimo crania in the museum of the Royal College of Surgeons, and in four mandibles out of eight at Cambridge.

Nasal Skeleton.—Several points in connection with the nasal skeleton deserve special mention. Thus in two skulls out of fifty-six at Copenhagen well marked pre-nasal fossæ were observed; again, in the Anatomical Museum at Kiel, where there is a collection of some ten skulls from Greenland, excessively attenuated nasal bones are seen in specimen No. 11, while No. 19 of the same series has the lowest nasal index (*viz.*, 32·7) with which we have yet met.

Crania of Children.—The Kiel series, moreover, contains three crania of Eskimo children, which are of special interest, for they enable us to learn which of the striking characters of the adult Eskimo cranium have been early acquired, and which are assumed comparatively late in the period of growth from childhood. Other crania were carefully observed with this object in view, and the opportunity was taken of similarly observing some crania of Eskimo children at Copenhagen. Though the support of numerical data cannot yet be appealed to, it is submitted that the following characters of the adult Eskimo crania appear very early, and

therefore may be regarded in the adult as retentions of infantile characters. These are:—

1. The dolichocephalic character. (Two mesaticephalic Eskimo crania were seen at Copenhagen, but these were not crania of children and were possibly not pure Eskimo.)
2. A megasemic orbital aperture.
3. A pyriform contour of the foramen magnum.
4. A flattened nasal skeleton.
5. Prominence of the chin. (This prominence is perhaps more apparent, in consequence of the condition referred to in No. 4, than real.)
6. Small mastoid processes.
7. A longitudinal palatine torus.
8. Persistence of the infra-orbital suture.

Whereas the following characters have been acquired by the skull in the course of growth:—

1. A low nasal index depending on relative narrowness of the apertura pyriformis nasi.
2. A scaphocephalic cranium without sagittal synostosis.
3. Greater prominence of the malar bones.

In concluding this paper, we wish to refer to two other specimens at Copenhagen, viz., A.B., *a*, 56, a Greenland cranium remarkable for being atypical in its facial though typical in its cranial features, and thus constituting a transitional type; and No. 159, where the external pterygoid plate is most curiously perforated and a reduplication of Civinini's foramen may be seen (the question of weathering is excluded). Finally, we have to reserve the consideration of the brain of the Eskimo, though the accounts of Chudzinski and Hrdlicka are not quite in accord on this subject, and the subject is one of great interest.

References to and explanations of the accompanying tables will be found in the text; but further, we have added a series of notes provided by Mr. Taber, and it should be understood that they are recorded without comment and as nearly as possible in the form in which they were communicated to us, for they belong to rather a different aspect of anthropology from that to which we have endeavoured to confine ourselves in the foregoing communication.

TABLE IA.—COMPARISON OF HEAD WITH SKULL OF ESKIMO.

TABLE I.—MEASUREMENTS ON THE LIVING ESKIMO.

Measurement.	Males.	No. available.	Females.	No. available.	Males.				Females.		
					Head.	No. available.	Skull.	No. available.	Head.	No. available.	Skull.
Maximum length of head	191.15	(11)	190.25	(10)	191.15	(11)	190	(10)	190.25	(10)	179
Maximum breadth of head....	147.65	(11)	141.8	(10)	147.65	(11)	136	(10)	141.8	(10)	131
Breadth of face	× 142.2	(11)	× 136.6	(10)	142.2	(11)	139	(17)	136.6	(10)	129
Nasi-alveolar length	73.15	(81)	69.35	(10)	73.15	(11)	72	(18)	69.35	(10)	70
Jugo-nasal chord	116.6	(10)	× 113.4	(6)	116.6	(10)	100	(18)	113.4	(6)	98
Jugo-nasal arc	127.1	(10)	× 122.8	(6)	127.1	(10)	107	(18)	122.8	(5)	104
Orbital height	34.9	(11)	36.6	(10)	34.9	(11)	35	(10)	36.6	(10)	34.5
Orbital width	42.6	(11)	42.7	(10)	42.6	(11)	40	(10)	42.7	(10)	38
Horizontal circumf. of head	559.5	(11)	547.2	(10)	559.5	(11)	525	(17)	547.2	(10)	498
Nasal height	57.4	(10)	51.25	(4)	57.4	(10)	53	(15)	51.25	(4)	50
Nasal breadth	36.8	(10)	32	(1)	36.8	(10)	24	(15)	32	(4)	22

TABLE I.

NOTE I.—It is to be noticed that in four cases the figures here given differ slightly from those published in the *Proceedings of the Cambridge Philosophical Society*. The four figures are marked thus x, as in the case of the facial breadth. An error in the measurement of this dimension in one of the men, "John," was detected in revising the averages, and raises this average by .5 mm., and in the case of the women an alteration of .1 mm. is needed; the other two are altered, *i.e.*, slightly increased, by the inclusion of the measurements of another individual, so that these averages are now based on data from five instead of four individuals.

TABLE IA.

NOTE I.—The above dimensions, with the exception of the maximum length and the horizontal circumference, are reproduced in the diagrams (see Figs. 2 and 3).

NOTE II.—The average value for the maximum length of the head when the records made by Virchow are combined with our data is 192.4 mm. (fourteen heads). Virchow's other data have not been worked up into combination with ours. *Cf.* Virchow, *Zeitschrift für Ethnologie*, Band xii, 1880.

NOTE III.—See also Schenk, *Bull. de la Soc. Neuchât. de Géographie*; abstracted in the *Centralblatt für Anthropologie*, 1900. Two skulls of Labrador Eskimo in the Lausanne Museum are described, and among other measurements we find: Hor. circ. 540 and 533, average 536.5⁽²⁾, which with our figures gives an average of 526 for nineteen skulls, supposing the Lausanne skulls to be those of males. Facial breadth, 137 and 134, average 135.5—with our figures gives 138.6⁽¹⁰⁾ as the average. But our figures are only very slightly altered thereby.

TABLE II.

Indices based on data provided in Table IA.	Males.		Females.	
	Head.	Skull.	Head.	Skull.
Cephalic or breadth	77	71.5	74.5	73.1
Facial (Kollmann)	51.4	51.8	50.7	54.2
Naso-malar (Thomas)	109.6	107	108.3	106.1
Orbital	81.9	87.5	85.7	90.1
Nasal	64.1	45.3	62.4	44

TABLE III.

Indices.	Males.		Males and Females.	
	Data provided in Table IA.		R.C.S.	C.
	Head.	Skull.		
Cephalic or breadth	77	71.5	72.03	71.8
Facial (Kollmann)	51.4	51.8	51.18	54.36
Naso-malar (Thomas)	109.6	107	106	107.9
Orbital	81.9	87.5	88.5	88.65
Nasal	64.1	45.3	42.8	45.55

R.C.S. Museum of Royal College of Surgeons.

C. Cambridge Anatomical Museum.

TABLE IV.—AVERAGES OF MEASUREMENTS OF THE TEN SKULLS OF ESKIMO IN THE ANATOMICAL MUSEUM AT CAMBRIDGE.

I. Average *Cephalic Index* = 71.8. 10 skulls (Labrador and Greenland).

Greatest div. above = 75.4

„ „ below = 65.8

Both Labrador skulls.

4 Greenland skulls. Average *Cephalic Index* = 72.5.

6 Labrador „ „ „ „ = 72.08

Greatest div. above = 75.4

„ „ below = 65.8

Both Labrador skulls.

- II. Average *Vertical Index* = 73·5. 9 skulls. Labrador and Greenland.
 Greatest divergence above = 79·2 } *both Labrador skulls.*
 " " below = 69·3
- III. Average *Orbital Index* = 88·65. 8 skulls. Labrador and Greenland.
 Greatest divergence above = 94·7 — a *Labrador skull.*
 " " below = 78·6
- IV. Average *Nasal Index* = 45·55. 7 skulls. Labrador and Greenland.
 Greatest divergence above = 2 of 50—one was a *Labrador skull.*
 " " below = 40·3—a *Labrador skull.*
- V. Average *Facial (Kollmann) Index* = 54·36. 6 skulls. Labrador and Greenland.
 Greatest divergence above = 62·3—a *Labrador skull.*
 " " below = 49·3
- VI. Average *Naso-Malar Index* = 107·9. 7 skulls. Labrador and Greenland.
 Greatest divergence above = 113·6 — a *Greenland skull.*
 " " below = 105·3 "
 Average of *Labrador skulls* = 107·5—(more constant).
- VII. Average *Gonio-zygomatic Index* = 80·5. 7 skulls. Labrador and Greenland.
 Greatest divergence above = 89—a *Greenland skull.*
 " " below = 72·3 "
 Average *Labrador skull* = 81·07—(most constant).
- VIII. Average *Stephano-zygomatic Index* = 80·9. Labrador and Greenland.
 Greatest divergence above = 91·5—a *Labrador skull.*
 " " below = 74·6—a *Greenland skull*
- IX. Average *Palato-maxillary Index* = 112·1. Labrador and Greenland.
 Greatest divergence above = 120—a *Greenland skull.*
 " " below = 105·3—a *Labrador skull.*
- X. Average *Horizontal Circumference* = 513·5. Labrador and Greenland.
 Greatest divergence above = 550—a *Labrador skull.*
 " " below = 476—a *Labrador skull*

TABLE OF VARIATIONS IN TEN ESKIMO SKULLS AT CAMBRIDGE.

Index or Character.	Average.	Range of Variation.	Extremes.	Labrador or Greenland.	
				<i>Highest.</i>	<i>Lowest.</i>
I. Cephalic	71·8	9·6	75·4—65·8	Labrador	Labrador.
II. Vertical	73·5	9·9	79·2—69·3	"	"
III. Orbital	88·65	16·1	94·7—78·6	"	Greenland.
IV. Nasal	45·55	9·7	50·0—40·3	"	Labrador.
V. Facial (Kollmann)	54·36	13·0	62·3—49·3	"	Greenland.
VI. Naso-malar	107·9	8·3	113·6—105·3	Greenland	"
VII. Gonio-zygomatic	80·5	6·7	89·0—72·3	"	"
VIII. Stephano-zygomatic	80·9	16·9	91·5—74·6	Labrador	"
IX. Palato-maxillary	112·1	14·7	120—105·3	Greenland	Labrador.
X. Horizontal circum- ference	513·5	74·0	550—476	Labrador	Labrador.

TABLE V.

Frequency of occurrence of certain anomalies.	Per cent. (figures in brackets indicate the absolute number examined).	Aboriginal Australians. Per cent.	Gorillas. Per cent.
Persistence of pars facialis of the infra-orbital suture	47.84 (200)	43.4	18.8
Pyramidal shape of the foramen magnum	40 (38)	—	—
Asymmetry of the foramen magnum	2.95 (287)	—	—
Third articular facet on margin of foramen magnum	1.61 (185)	15.15	1
Eustachian spines on basal surface of petrous bones	3.63 (35)	—	—
Thickening of the body of the mandible	30 (32)	—	—

MISCELLANEOUS NOTES FURNISHED BY MR. R. G. TABER.

- I. *Names*.—No family names. Tribal names derived from district, *e.g.*, Nackvack tribe, etc.
- II. *Religion*.—These Eskimo are all Christians. The Moravians, who are missionaries and traders, have had a station at Hebron for nearly 80 years. "Wise men" or "Conjurors" disappear when a tribe becomes Christianised. One of Taber's Eskimo was formerly a "wise man," but since becoming a Christian has retired from that profession.
- III. *Marriage*.—This is celebrated according to the Moravian rite among the Christianised Eskimo, one of the missionaries officiating; should the services of a missionary not be available, marriage would probably not be postponed on this account. Polygamy has ceased among the Christianised Eskimo. One of Taber's Eskimo had two wives formerly.
- IV. *Intermarriage, and Half-breeds*.—As a general rule half-breeds are uncommon. The Eskimo never, so far as is known, intermarry with Indians in Labrador, so the parentage of the half-breeds, as in the case of the child Nancy in Taber's party, is generally European and Eskimo. So great is the dislike of the Eskimo for the Indian, that when two parties meet at a trading post of the Hudson Bay Company, they invariably camp far apart, in some cases on different banks of a river.
- V. *Movements*.—In summer the Eskimo of Labrador wander considerable distances along the coast and over the islands; the Indians in summer also invade Labrador, retiring in winter, though in summer they may travel as far north as Cape Chudleigh.
- VI. *Climate of Labrador*.—Taber has written a detailed account of this in an American periodical called *Outing*. In winter there is daylight between 9 a.m. and 3 p.m. The general appearance of the environs of Hebron is, to judge from photographs, desolate in the extreme.
- VII. *Decrease in the Eskimo Population* is ascribed by Taber to the following influences:—
Use of European dwelling-places. Cooked food; the Eskimo cook almost all food now, except certain small fish, which are eaten raw. Admixture by marriage. General changes in mode of life owing to European influence.
- VIII. *General Folklore*.—Taber is about to publish the accounts furnished by the Labrador Eskimo of the origin of the seal; of the origin of the "Northern Lights"; also a legend of a great flood.
- IX. *Kajaks*.—The Labrador model is identical, even in details, with that in use in Greenland and figured by Nansen (*Eskimo Life*). One of Taber's Eskimo, "John," said that balancing by means of the paddle was not necessary for a good kajak man, who would be quite independent of such an use of the paddle.

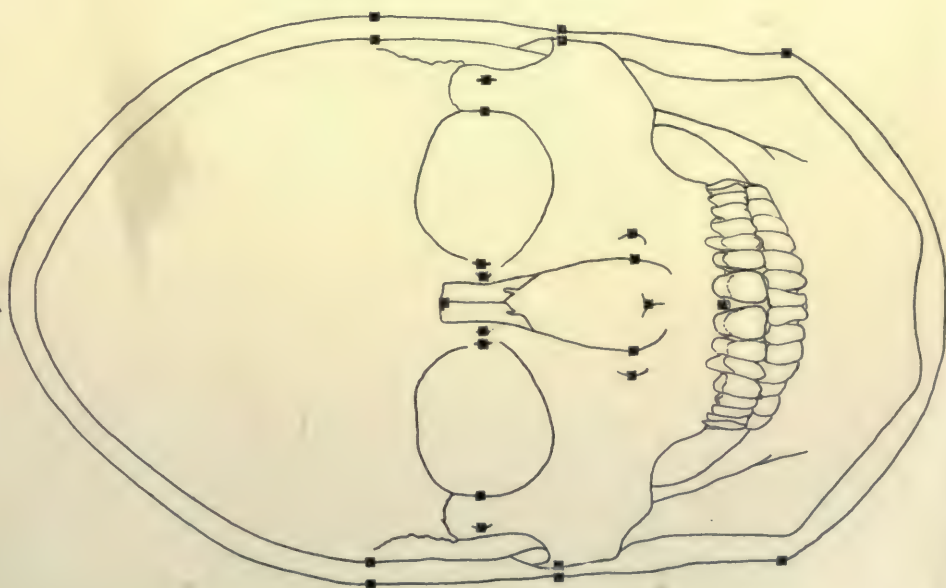
DISCUSSION.

Mr. SHRUBSALL remarked that the papers just read raised questions of considerable interest from several points of view. Physical measurements are of value as aids to the interpretation of other evidence as to the past history of the Eskimo, who are contrasted by different observers with certain of the inhabitants of Southern France in the early stone age as represented by the skeletal remains found at Chancelade, in the Dordogne, with the Fuegians and other dolichocephalic tribes of South America, and with the peoples of North-eastern Asia. To these the Eskimo present certain resemblances, most closely to the latter, the balance of evidence being in favour of their Asiatic origin.

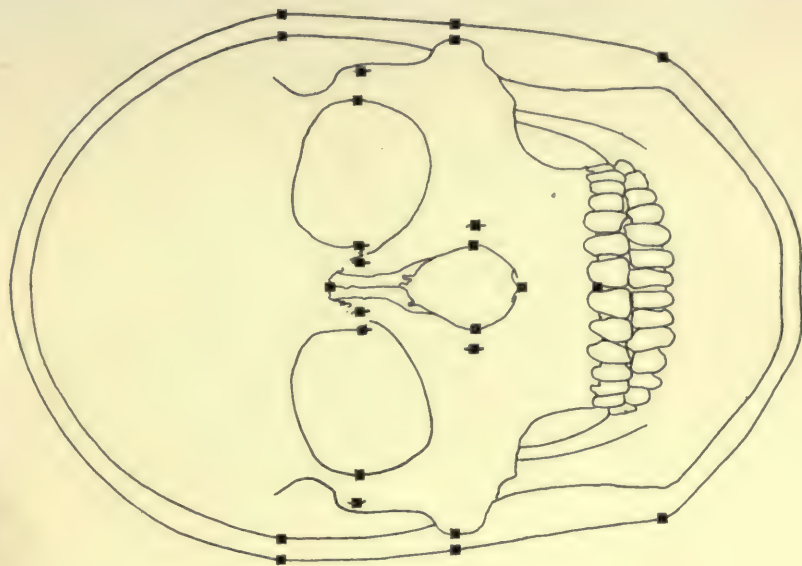
Dr. J. DENIKER, Librarian of the Jardin des Plantes, and Honorary Fellow of the Anthropological Institute, complimented the authors of the papers on the results of their investigation, and regretted that the rarity of observations hitherto makes it difficult to arrive at a definite conclusion in regard to the affinities of the Eskimo. In regard to the theory of an Asiatic origin, it should be remembered that though there are representatives of the Eskimo in Siberia, they cannot be traced back in Asia more than three or four centuries, and are therefore probably themselves of American origin. In regard to their South American affinities, he referred to the valuable work of Dr. Garson on the Fuegians, and to his own memoirs on the same people published in collaboration with Dr. Hyades,¹ and pointed out the probability that the dolichocephalic stocks of the more northerly and southerly regions of the New World, which, however, their other characters show not to have been identical with them, might at one time have been driven apart from one another into their present habitats. Referring to the works of Dr. Boas and Dr. Rink, he said that the original home of Eskimo seems to be the land between Hudson's Bay and Southern Alaska. From these regions they migrated to the east, west, and north. In this way the Labrador Eskimo of the vicinity of Hudson Bay may be very pure representatives of the Eskimo race, which is distinct from other American races, and displays some characteristics of the Ugrian race, such as short stature, dolichocephaly, the peculiar shape of the eyes, and the like.

¹ *Mission Scientifique du Cap Horn*, vii. Par P. Hyades et J. Deniker. Paris, 1891.

HEAD OF ESKIMO. ♂.
Fig. 1.



HEAD OF ESKIMO. ♀.
Fig. 2.



W.H.L.D. del. 1883. 1900.





VIEWS IN NORMA FACIALIS (NOS. 1-4) AND NORMA LATERALIS (NOS. 5-8) OF FOUR
SKULLS FROM THE UNIVERSITY MUSEUM OF HUMAN ANATOMY AT KIEL.

The Eskimo cranium (Nos. 4 and 8) is very scaphoid, yet synostosis in the sagittal suture is not complete. In the three European crania (Nos. 1-5, 2-6, 3-7) the smallest of which (Nos. 2-6) is a very young skull, complete obliteration of the sagittal suture through premature synostosis is seen to have occurred without any accompanying scaphocephalic appearance. In two of the European crania (Nos. 1-5, 2-6) practically no deformation has occurred, though in the smaller of these, synostosis was very complete in all the cranial sutures. In the largest European cranium (Nos. 3-7), some distortion has been produced in the direction of acrocephaly.

These specimens afford examples of exceptions to the general rule enunciated by Virchow as to the relation between cranial growth, and synostosis of cranial sutures.



ON A COLLECTION OF CRANIA, WITH TWO SKELETONS, OF THE
MORI-ORI, OR ABORIGINES OF THE CHATHAM ISLANDS. WITH
A NOTE ON SOME CRANIA FROM THE SAME ISLANDS NOW
IN THE MUSEUM OF THE ROYAL COLLEGE OF SURGEONS.

By W. L. H. DUCKWORTH, M.A., Jesus College, Lecturer on Physical Anthropology
in the University of Cambridge.

[READ JUNE 12TH, 1900.]

THE following notes are descriptive of ten crania, with two skeletons, which have been recently added to the Anatomical Collection at Cambridge. The only information that is available respecting their provenance is to the effect that they were sent to this country by Mr. H. A. Travers, of Wellington, New Zealand. Mr. Travers's collection is mentioned by Professor Turner in the *Challenger* reports, and it is believed that the specimens now under consideration are certainly genuine. Eight appear to be male skulls, and two (with the skeletons) are probably those of females.

The description will fall into two subdivisions, in the first of which the most important characters of the specimens will be enumerated ; and this will be succeeded by a brief discussion on the kind and degree of resemblance of the crania to those already treated of by others under the description of Mori-ori or Chatham Island skulls. In the first place, whereas the members of this series of ten skulls are very generally alike, they agree particularly in presenting a combination of features much more suggestive of an affinity with a Polynesian than with a Melanesian physical type. Thus the breadth of the cranium is distinctly greater (relatively) and the parietal eminences are more outstanding than is the case in typical Melanesian crania ; the cranial capacity, however, does not afford a means of discrimination, though it is slightly in excess of the average value obtained from Melanesian series, the crania being in fact of moderate size. A striking feature which they share with typical Polynesian crania is a rounding off of the angle of the mandible, whereby the estimation of the value of that character in degrees is rendered more difficult than usual. The glabellar prominence is in few cases well developed, and herein, again, the affinity is with crania of Polynesian rather than of Melanesian origin. Symmetrical flattening on either side of the sagittal suture gives rise to a very distinctly pentagonal appearance in norma occipitalis ; this has already been recorded as a characteristic of a Mori-ori skull described by Hyrtl (quoted by Turner). There is no case of a fronto-squamous articulation at the pterion, although in several cases epipteric ossicles are seen.

Finally, we may mention two classes of abnormalities, the first of which might be described as adaptive, though its real significance is not quite clear. It consists

in a tendency, which is quite marked among these skulls, to the production of bony paracondylar processes on the occipital bone. In the second class the variations are pathological and consist in extreme attrition of the teeth together with a sort of dislocation, so that the surface of the roots comes into play in the alveolar plane. Many cases of alveolar abscess were indicated by the condition of the tooth sockets. And finally, the frequency of the ravages of osteo-arthritis in the bones of the skeleton is very marked; Dr. H. A. Forbes, of Liverpool, confirms this observation from the inspection of skeletons actually in the Chatham Islands, and the skeleton of a Chatham Islander in the Dresden Anthropological Collection presents unequivocal evidence of the existence of this condition.

With the above exceptions, comparatively few abnormalities have to be noticed.

The following notes refer to the individual features of the several crania:—

- No. 1. Skull of an adult female with nearly complete skeleton. General preservation good. Few teeth remain, and these are much worn down. At the root of the left upper median incisor is a cavity, looking as if a cyst or abscess had existed here. The only other remarkable point is the conformation of the occipito-atlantic joint, which presents a rare abnormality. Paracondylar processes are present on each side, and of such a size that they articulate laterally with the articular surfaces of the atlas. Moreover, on the right side, the tip of the paracondylar process articulates with the extremity of the transverse process of the atlas. The left styloid process is perforated at its base by a foramen in addition to the normal foramen styloideum. Many signs of osteo-arthritis are seen about the pelvis and the lumbar section of the vertebral column, rendering the measurements of the bodies of lumbar vertebræ of comparatively little value.
- No. 2. Sex doubtful. Aged individual. Teeth much worn. Sagittal suture completely closed. Two parietal foramina. Small paracondylar processes present. Mastoid processes (especially the right) very small. Posterior palatine spine bifid.
- No. 3. Large male skull. A good deal weathered. The teeth are much worn. On the margin of the foramen magnum there is situate anteriorly a depression (probably for articulation with the odontoid process of the axis). The carotid canals are imperfectly closed in at the apices of the petrous bones.
- No. 4. Adolescent individual, probably a female. The third molars not yet evident. The sagittal suture is, however, almost completely closed by synostosis, but there is no trace of scaphocephaly. One large parietal foramen. The teeth are of excellent quality. On the anterior margin of the foramen magnum is a small pit, possibly for the reception of the tip of the odontoid process of the axis.

- No. 5. Skull of an adult male. The teeth in good preservation. The nasal bones are extremely reduced in size, especially in breadth. Large wormian bones at the pterion on either side.
- No. 6. Massive skull of an adult male. The mandible is thickened anteriorly to the ascending ramus so as to resemble the condition present in many mandibles of Eskimaux. There are paracondylar processes, that on the right side being small. The occipital condyles throw out projections anteriorly (*cf.* Poirier; *Traité d'Anatomie humaine*, Tome 1^{er}, p. 384).
- No. 7. Massive skull of an adult male. Teeth much worn down. The posterior palatine spine is bifid. The occipital condyles send forward processes on to the basilar process of the occipital bone.
- No. 8. Skull of an aged male. Slightly weathered. Teeth much worn and signs of an abscess cavity conterminous with the antrum of Highmore on the right. There is also a cavity of doubtful nature in connection with the socket of the left upper median incisor. The posterior palatine spine is bifid. Large paracondylar process on the right side.
- No. 9. Skull of an adult male. Weathered and platybasic. Most of facial skeleton destroyed. Many teeth lost. The chief features are the flattened areas on either side of the sagittal suture, the ruggedness of the temporal crests in that region, and the high degree of prominence of a well-marked transverse occipital torus, the latter character resembling that described by Miklouho-Maclay in an Australian cranium (*Proc. Linn. Soc. N.S.W.*, vol. viii).
- No. 10. Skull of an adult female with complete skeleton. Teeth much worn. Cavity in connection with socket of left upper lateral incisor. Signs of alveolar abscesses in margins of mandible in the region of the molar teeth. The posterior palatine spine is bifid. There is a wormian bone (epipteric ossicle) at each pterion. Incipient development of paracondylar processes is observed.

We may now turn to the second portion of the present communication and herewith inquire how far these characters and dimensions accord with accounts previously published of genuine Mori-ori crania.

Of such accounts, that written by Professor Sir William Turner in the *Challenger* reports is of first-class importance, as constituting the earliest summary of the osteological characters of these Pacific Islanders. But not less important, owing to the quantity of material dealt with and the minuteness of the investigations by which it is characterised, is the work of Dr. Scott, of Otago, on the osteology of the Maori and the Mori-ori (*Transactions of the New Zealand Institute*, vol. xxvi, 1893). In this exhaustive report the skulls of nearly fifty Mori-ori natives are described, and the resulting indices compared with those published earlier by Turner. The latter observer had at his disposal only about half the number of skulls mentioned in reference to Scott's work.

Most of the measurements made by Scott have been adopted in the present paper, and in consideration of the comparatively small number (ten) of the crania at Cambridge, comparisons will be herein instituted in the main with Scott's results, without bringing into line in every case the results of Turner unless there is a particular reason for so doing. As a matter of fact, we may sum up the matter by saying that the present crania differ in no important respects from those at the disposal of the above-mentioned authors, whose own accounts will be seen, from Scott's monograph, to be remarkably consistent. Finally, the study of the hitherto undescribed Mori-ori crania in the Museum of the Royal College of Surgeons tends to exactly the same conclusion.

For comparison of results, the table on p. 145 has been devised as the most convenient means of enabling the figures to be compared with the minimum of cross-references.

Adopting the order of arrangement followed by Scott, the cranial capacity will be the first subject of comparison. From the table it appears that in both series the average value for specimens of both sexes would be designated as mesocephalic, but that when males alone are considered, the designation must be megacephalic in Scott's series and mesocephalic in the Cambridge collection. The difference, in the case of males alone, is not great (19 c.c.), and in the combined data for skulls of both sexes there is practically identity in the results. The range of variation is represented by the figure 395(10) in the Cambridge series, as against 365(29) for males and 465(38) for both sexes in Scott's records. Finally, the Cambridge series contains one specimen of exceptionally high capacity similar to those mentioned by Scott, as having been recorded by De Quatrefages and Hamy (average of three male skulls 1,600 c.c.); this specimen at Cambridge has a capacity of 1,685 c.c. (No. 3). The small number (two) of the female skulls at Cambridge scarcely justifies detailed comparison of the averages obtained from their measurements with the more extensive series recorded by Scott.

In the succeeding indices the agreement between the two sets of figures is quite remarkable; in three indices, viz., nasal, gnathic (alveolar), and palatomaxillary, the accordance would have been probably even greater than is actually the case were it not for the weathering of the bones, which has for one of its results to render accurate measurements unusually hard to obtain. At the same time, the difference might almost be accounted for by the difference in number of the specimens. Such agreement affords strong evidence in favour of the authenticity of the Cambridge specimens.

One or two indices and measurements mentioned by Scott have not been included in the table, and are more conveniently referred to here. In the first place, the index of the foramen magnum yielded Scott the following figures:—Average 87·3(48) for the sexes taken together; with this we can compare the corresponding figure for the Cambridge skulls, viz., 90·5(10) with a range of 35·8 units, as against 23·5 in Scott's observations. Secondly, the ophryo-spino-auricular angle gives the results. (See p. 146.)

In this table the figures within the small brackets denote the number of skulls available for statistical purposes.	All available data.	Skulls of both sexes.	Skulls of males.	Skulls of both sexes.					
				Distribution into groups.					
				Totals.	Per cent.	Totals.	Per cent.	Totals.	Per cent.
Character.	Cranial capacity.			Megacephalic.		Mesocephalic.		Microcephalic.	
Scott's series	1460 ⁽⁴⁷⁾	1416 ⁽³⁸⁾	1455 ⁽⁹⁾	15	39.5	13	34.2	10	26.3
Cambridge series	1452.1 ^{(87)*}	1415 ⁽¹⁰⁾	1436 ⁽⁸⁾	3	30	2	20	5	50
Character.	Cephalic Index.			Brachycephalic.		Mesaticephalic.		Dolichocephalic.	
Scott's series	76.1 ⁽³⁸⁾	76.3 ⁽⁴⁰⁾	76.3 ⁽³⁰⁾	1	2.5	31	77.5	8	20
Cambridge series	76.4 ^{(68)*}	78 ⁽¹⁰⁾	78.1 ⁽⁸⁾	2	20	7	70	1	10
Character.	Vertical Index.			Akrocephalic.		Metriocephalic.		Tapeinocephalic.	
Scott's series	?	72.7 ⁽¹¹⁾	72.6 ⁽³¹⁾	2	4.9	21	51.2	18	43.9
Cambridge series	72.6 ^{(51)*}	72.5 ⁽¹⁾	72.2 ⁽⁸⁾	0	0	7	70	3	30
Character.	Orbital Index.			Megasemic.		Mesosemic.		Microsemic.	
Scott's series ...	90.1 ⁽⁶³⁾	89 ⁽⁴²⁾	88.6 ⁽³³⁾	20	47.6	18	42.9	4	9.5
Cambridge series	89.8 ^{(72)*}	87.8 ⁽⁹⁾	87.7 ⁽⁷⁾	4	44.5	4	44.5	1	11
Character.	Nasal Index.			Platyrrhine.		Mesorrhine.		Leptorrhine.	
Scott's series	46.8 ⁽⁶³⁾	46.8 ⁽⁴²⁾	46.1 ⁽³²⁾	0	0	15	35.7	27	64.3
Cambridge series	46.5 ^{(72)*}	44.6 ⁽⁹⁾	44.3 ⁽⁷⁾	0	0	2	22.4	7	77.6
Character.	Gnathic Index.			Prognathic.		Mesognathic.		Orthognathic.	
Scott's series ...	97.6 ⁽⁵⁶⁾	97.7 ⁽⁴¹⁾	97.8 ⁽³¹⁾	0	0	22	53.7	19	46.3
Cambridge series	97.3 ^{(68)*}	96 ⁽⁹⁾	96.4 ⁽⁷⁾	0	0	2	22.4	7	77.6
Character.	Palatomaxillary Index.			Brachyuranic.		Mesuranic.		Dolichuranic.	
Scott's series	119.5 ⁽⁴⁷⁾	120.8 ⁽³⁰⁾	120.8 ⁽³⁰⁾	35	89.7	4	10.3	0	0
Cambridge series	118.9 ^{(57)*}	116.3 ⁽¹⁰⁾	115.4 ⁽⁸⁾	8	80	0	0	2(?)	20(?)

* It must be noticed that the figures thus marked refer to data collected from all available sources, *i.e.*, Scott's results from all sources combined with those yielded by the Cambridge specimens: for economy of space it was thought permissible to place these figures in the positions they now occupy, although, as will be seen, those particular lines are otherwise exclusively devoted to the Cambridge specimens.

		Male.		Both sexes.	
		No.	Average.	No.	Average.
Scott's observations	...	32	67°	42	67° 30
Cambridge series	...	7	67° 30'	9	68°

The nearness of these average results is the more striking when it is remembered that Scott's measurements were made with the aid of Broca's goniometer, while in the case of the Cambridge specimens the angles were measured after the including lines had been drawn through the several points projected by means of Broca's stereograph.

In considering the relation of the basi-nasal length to the mesial vertical circumference, we find that the former dimension is in the Cambridge specimens 25·3 per cent. of the curve over the vertex from basion to nasion, as compared with 24·7 per cent., which is recorded by Scott as the corresponding figure in his series.

The data resulting from the measurements of the several segments of the median sagittal arc may be summarised in the following table:—

Description of Specimens.	Males (Scott).	Approximate corresponding frequency in the whole Cambridge series.	Whole Cambridge series, actual data.	Males (Scott).	Approximate corresponding frequency in the Cambridge series (males only).	Cambridge series (males only), actual data.
F > O	22 ⁽³²⁾	26 ⁽³³⁾	8 ⁽¹⁰⁾	22 ⁽³²⁾	28 ⁽³²⁾	7 ⁽⁸⁾
F > P or O	20 ⁽³²⁾	22 ⁽³²⁾	7 ⁽¹⁰⁾	20 ⁽³²⁾	20 ⁽³²⁾	5 ⁽⁸⁾
P > F „ O	5 ⁽³²⁾	6 ⁽³²⁾	2 ⁽¹⁰⁾	5 ⁽³²⁾	8 ⁽³²⁾	2 ⁽⁸⁾
P < F „ O	13 ⁽³²⁾	16 ⁽³²⁾	5 ⁽¹⁰⁾	13 ⁽³²⁾	16 ⁽³²⁾	4 ⁽⁸⁾
O > F „ P	5 ⁽³²⁾	3 ⁽³²⁾	1 ⁽¹⁰⁾	5 ⁽³²⁾	4 ⁽³²⁾	1 ⁽⁸⁾
O < F „ P	16 ⁽³²⁾	10 ⁽³²⁾	3 ⁽¹¹⁾	16 ⁽³²⁾	12 ⁽³²⁾	3 ⁽⁸⁾

EXPLANATORY NOTE.—F, P, and O indicate the respective lengths of the frontal, parietal, and occipital arcs. In modifying the data yielded by the Cambridge specimens, in order to make a closer comparison with Scott's figures, fractions have been ignored, and the nearest whole number has been recorded. This will explain what might otherwise be considered as errors.

From which one concludes that the two series are extremely alike.

From the measurements, we may now turn to a number of points of descriptive anatomy dealt with by Scott, the first whereof to be considered is the general shape of the cranial vault. Herein the Cambridge specimens entirely agree with the description provided by Scott; the same remark applies to the sutures,

but no case of an interparietal bone occurred (among Scott's forty-nine skulls). As regards the region of the pterion, the new series presents five ossicles in this situation in the *ten* skulls examined (Scott: twenty-six in nineteen skulls). Other wormian bones are slightly less frequent than in Scott's series. Scott mentions the occurrence of paramastoid processes on one side or both in each of four skulls (? out of forty-nine). It may be possible that the term paramastoid includes processes that we should call paracondylar. However this may be, we noticed no unusual paramastoid processes, but in five skulls unusually well developed paracondylar processes are seen (see especially No. 10), and we may now allude to the splendid collection of nearly seventy Mori-ori crania in the Museum of the Royal College of Surgeons; among these a long paracondylar process occurred once and on one side only. Aural exostoses are not to be seen in the Cambridge series, but one specimen at the College of Surgeons presents this condition. Out of seven of the (ten) Cambridge specimens, there are four with absence or closure of the postcondylar foramen on both sides, and in the other three this foramen exists on one side only. Scott gives its frequency of occurrence as twenty-three (? out of forty-nine skulls), on one side only, and complete absence in eight cases. In two male skulls at Cambridge the massive transverse occipital torus noted by Scott is present. The position of equilibrium of the Cambridge crania may be summarised as: anterior mastoid, four out of ten (Scott: one in forty-nine); posterior mastoid, four out of ten (Scott: eleven out of forty-nine); anterior condylar, two out of ten (Scott: four out of forty-nine). The pterygo-spinous foramen of Civinini is not seen in one of the Cambridge specimens, even in an incomplete form (Scott met with it—incompletely developed, however—in six cases).

The nasal bones conform precisely to Scott's description. Out of the ten Cambridge skulls, four are oxy-craspedote, and five bothro-craspedote (Scott says that the nasal margin is "rounded off" in twenty out of forty-nine skulls). As regards the so-called third occipital condyle, a faint marking in one of the Cambridge specimens suggests that an articulation may have existed in the situation of this process. Much more distinct are the facets shown by two skulls out of the sixty-five at the College of Surgeons. Of the lacrymal bone, it can only be said that while two (in the same skull) are fenestrated, this tendency, as well as that to the formation of a fronto-maxillary articulation within the orbit, is less marked in the ten Cambridge specimens than in Scott's series. The mandible has already been commented on.

It remains to notice the usage of the teeth, and we may mention that Scott remarks that the Mori-ori and Maori crania agree closely in this particular. Without quoting his description in detail, we may say that the curious usage and partial dislocation referred to by Scott and mentioned in the earlier part of this communication was observed by Scott in Maori as well as Mori-ori crania, and can also be seen in sixteen out of sixty-eight specimens in the College of Surgeons (the Mori-ori crania of the Barnard-Davis collection are here included). So, too, signs of alveolar abscesses, similar to those noted in the Cambridge specimens, were seen by

Scott in the crania of his collection. One of the Cambridge skulls shows a curious pit behind the third upper molar on both sides, which may have contained an additional tooth, but no trace of such a supernumerary structure remains.¹ In one adult skull at the College of Surgeons (No. 765N) the third molar is diminutive.

Finally, it may be mentioned that an asymmetrical condition of the foramen magnum, and a tendency to the production of exostoses in the form of processes and bony bars (*cf.* Grünbaum, *Journal of Anatomy and Physiology*, vol. xxv), near its posterior and lateral margins, characterise the specimens at Cambridge as well as those at the College of Surgeons.

To sum up, then, the chief value of the new series of Mori-ori crania will be based on the corroborative evidence they afford of the generalisations so often referred to in the course of this paper. At the same time, we are now in a position to regard them as quite typical specimens of the Mori-ori race, the difference of whose cranial characteristics from the Maori have been thus summed up by Scott, in speaking of the Mori-ori skull:—"It differs from the Maori skull mainly in its lesser height, both absolute and relative to length and breadth, the greater excess of the parietal over the frontal width, the higher orbits, and the narrower nasal opening. The depressed and retreating forehead is also a very marked feature of many Mori-ori skulls. It is slightly broader relatively to its length, and somewhat more prognathous. The cranial capacity is also somewhat less. But, as already pointed out, there is often a very close resemblance between Maori and Mori-ori skulls. The variation of the indices, though somewhat more restricted than with the Maoris, is still considerable, and points, like the traditions of the people, to an origin from the two great Pacific stocks. The different types of Mori-ori skull have been already sufficiently described."

From the study of the skulls we must now turn to that of the other bones of the skeleton, and the following notes embody the results obtained from observation of the two skeletons now at Cambridge:—

The Scapular Indices are represented by figures higher than those yielded by scapulæ of Europeans or Polynesians, but on the other hand are respectively lesser and greater than the average index afforded by Melanesian scapulæ.

The Clavicular Index.—Comparative data are still scanty, but it may be mentioned that these indices exceed those of European females and even of negroes by a good deal.

Platynemia.—The skeleton No. 10 shows a distinct degree of platynemia. The other skeleton, however, does not possess this character, so that no reliance can be placed on this indication.

Platymeria.—These indices show an extreme degree of platymeria.

In comparing the foregoing data with the records provided by Scott, it may be

¹ A similar pit occurs in the upper maxilla of an orang-utan cranium in the Anthropological Institute at Munich: it is the more remarkable since this orang cranium possesses already two supernumerary molar teeth immediately in front of the pit referred to.

noticed that the scapulae of the Cambridge skeletons are broader and therefore of an inferior type to those measured by Scott; that the degree of platynemia, on the other hand, is less marked in the Cambridge specimens than in Scott's series; and that the differences that may exist between the right and left limbs of the same individual are so considerable as to seriously discount the value of conclusions drawn from any but very large series of measurements.

Stature.—The indication here is of extremely small stature—1,470 mm. and 1,441 mm. respectively. Allowance being duly made for the sex, the indication is rather against the skeletons having belonged to the ordinary or unmixed Polynesian type.

In conclusion, the evidence from the skeletons possesses little value in determining the race to which the individuals belonged. At least, however, one can note the *general* absence of signs of inferiority (or what are usually regarded as possessing such a significance), while the extremely diminutive stature of these females might possibly be cited as an exception to such a general indication.

The pelvic indices place the specimens in the mesatipellic group of Turner. It should be remarked that whereas the female pelvis in any case affords but little evidence of weight in assigning to any particular race a given skeleton, the indication here is still further obscured in the case of No. 1 (A) owing to the occurrence of osteo-arthritis. It remains to be said that Turner is inclined to place Melanesians in the mesatipellic group, while he supposed that Polynesians would probably come within the dolichopellic division. The fact that this index brings the Chatham Islands skeletons into relation with the Melanesians, while their cranial characters are those of Polynesians, need not be regarded as of great moment in the present state of our knowledge of the subject. On the other hand, Scott records the indices of two male and one female Mori-ori pelves, and these are all platypellic.

The proportions of the sacra place these in the platyhieric group, the influence of sex being felt herein. The index of B is very high and only surpassed in Turner's records by that of the sacrum of a Hindu female, viz., 127. Scott remarks that of three sacra measured by him, one (a male) was platyhieric; the two others (male and female respectively) were at the upper limit of the subplatyhieric group.

As regards the lumbar indices, disease has much modified the shapes of the lumbar centra of No. 1, hence no doubt the figure 106·4, which falls in with those found in non-pathological spines of some Australians and Tasmanians. On the other hand, the 93·2 for No. 10 is practically identical with the average figure deduced from observations on twenty-three Irish females (Cunningham, quoted by Turner).

The radio-humeral and tibio-femoral indices may be considered together. They would place the skeletons either actually or almost in the same group as Polynesians or Melanesians, according to Turner. No conformation indicating inferiority is denoted by such an association.

The intermembral index shows that No. 1 (A) has similar proportions to the average European, the index of No. 10 (B) being a little higher (*i.e.*, with slightly and only very slightly longer upper extremity). The effect of stature may be responsible for the difference.

As regards the femoro-humeral index, both skeletons show figures (73·5 and 71·7) but little removed from the average figure (72·2) given for Europeans (Broca).

Little more can thus be added to the remarks of Scott, who from the observation of five skeletons concludes that these "show in most instances a very close correspondence with what we find among the Maoris."

Mori-ori Crania.

Tables I, II and III present the principal dimensions, etc., of the crania and skeletons. Table I, on p. 150, gives those of the crania.

TABLE II.—MORI-ORI SKELETONS.

A. With Cranium No. 1.

B. With Cranium No. 10.

Dimensions whence Indices are calculated.	A.	B.
Length : humerus	285	271
" radius	211	217
" humerus and radius	496	488
" femur....	388	378
" tibia	322	307
" femur and tibia	710	685
" clavicle	141	138
Scapula :		
height....	145	131
breadth	99	94
Sacrum :		
length ...	107	89
breadth	125	113
Pelvic brim :		
conjugate	125	118
transverse	135	129
Tibia :		
R. { antero-posterior	27	27
transverse	21	18
L. { antero-posterior	27	30
transverse	21	18
Femur :		
R. { antero-posterior	21	21
transverse	29	30
L. { antero-posterior	21	21
transverse	30	30
Lumbar vertebrae :		
sum of anterior diameters	125	133*
sum of posterior diameters	133	124*
Total height of pelvis	185 ?	182 ?
Total breadth of pelvis	255	237
Pubo-ischiatic length	94	90
Scapula :		
infraspinous length : right side	108	104
infraspinous length : left side	109	104
Middle of shaft of femur :		
sagittal diameter on R.	23	23
sagittal diameter on L.	24	23
Transverse diameter on R.	24	24
Transverse diameter on L.	24	24

TABLE III.—THE SAME.

A. With Cranium No. 1.

B. With Cranium No. 10.

Indices.	A.	B.
Pelvic (Brim)	92·5	91·4
Sacral	116·8	126·9
Lumbar	106·4	93·2
Radio-humeral	74	76·4
Tibio-femoral	83	81·2
Intermembral	69·8	71·2
Humero-femoral	73·5	71·7
Scapular	68·2	71·7
Clavicular	49·4	50·9
Tibia (platynemia)	77·7	66·6 (60 L.)
Femur platymeria	{ 72·4 R. and 70 L.	{ 70 R. and L.
Stature, from femur	1,470	1,441
Total pelvic	72·5	76·6
Scapular, infraspinous :		
Right	91·7	90·4
Left	90·8	90·4
Index of cavity of pelvis	69·6	69·7
Index of femur at middle of the shaft ...	{ 95 100	{ 100 100

* B, pathological.

TABLE IV.

To indicate some characters presented by Mori-ori crania in the Museum of the Royal College of Surgeons. The total number examined was sixty-five.

Character.	No. of examples.	Catalogue Nos. of specimens presenting the character.	Percent-age.
Asymmetry of foramen magnum	5	761—762—763—765 E—765 Zh.	7.69
Third occipital articular surface....	2	765 Zm—765 Zq.	3.07
Scaphocephaly without synostosis in sagittal suture.	1	765 K.	1.53
Aural exostoses	1	765 N	1.53
Paracondylar process as in No. 10 Cambridge.	1	765 R	1.53
Excessive wear (with partial dislocation) of molar teeth.	13	765 L.. M.. U.. Zb.. Zc.. Zg.. Zh.. Zv.. Zw.. Zx.. Zy.. Zz and three others from the Barnard Davis collection.	20
Very Melanesian in appearance....	1	765 Zs.	1.53
Strong resemblance to Maori skull at Cambridge.	1	765 C.	1.53

DISCUSSION.

The PRESIDENT expressed his interest in hearing that the physical evidence was in favour of a Polynesian origin for the Mori-ori, for the reason that their arms and implements were distinctly Polynesian in type. Unfortunately, however, there was no greater certainty as to the true Mori-ori origin of these implements than existed in the case of the skulls. It was clearly possible that, although found in the Chatham Islands, the former might be the work of invading Maoris. It must be confessed, however, that the implements from the Chatham Islands had a different style from those found in New Zealand.

Mr. SHRUBSALL observed that the study of Mori-ori remains is most interesting and constitutes a very essential contribution towards a complete physical history of the races of the Pacific islands. The task is rendered the more difficult by two factors; firstly, by the intrinsic resemblances between the Mori-ori and Maori tribes, both being members of the same Polynesian stock; and secondly, by overrunning of the Chatham Islands in 1835 by Maori invaders from the Taranaki district of New Zealand, with the result that it is now no easy matter to decide for certain as to the origin of any given skeletal remains which may be discovered.

THE SYSTEM OF WRITING IN ANCIENT EGYPT.

BY F. LL. GRIFFITH.


THE general appearance of Egyptian hieroglyphic writing is very well known, and the nature of it has often been explained. But it is a subject of some importance, and one which still repays close investigation. On seeing a well cut or painted inscription, even those who are not Egyptologists often feel a desire to know the meaning of its signs and groups, and to understand how the little pictures convey that meaning. If pressed for explanations, the specialist has to avow that in a vast number of cases he cannot give sound and exhaustive reasons for his interpretations; he knows that the Egyptians attached such and such meaning or significance to a sign, but often he does not understand the connection between the picture and the sense, nor does he know what the sign represents pictorially. In the last few years Egyptologists, each of them following his own bent, have endeavoured to grapple more closely with the problems that confront them, to trace, for instance, the history of the arts and crafts in Egypt by means of scientific excavations, or by working on the materials in museums, and to ascertain the principles which underlie the Egyptian language and its development, and so at length to obtain facts in place of the vague approximations or serious misconceptions of their predecessors. In short, they have already begun to crown the labours of Champollion, de Rougé, Brugsch, and Lepsius—to mention only the leading names among a crowd of scientific or enthusiastic workers—by putting the subject of Egyptology on a scientific basis so sure that labourers in other fields may begin to employ its results without fear that these will quickly be contradicted by the progress of further research. In 1802 a Swede, Akerblad, commenced the decipherment of Egyptian; now, at the commencement of the twentieth century, the subject and the study are rapidly transforming themselves from uncertainties and guess work to precise knowledge and exact investigation.


One branch of Egyptology requiring such investigation is the *history of the writing*. Professor Petrie has shown how finely detailed hieroglyphs of the Old Empire tombs can instruct us as to the material civilisation of the contemporary Egyptians, though the artist who drew them had intended them to record in decorative style only dry names and formulae. Organised endeavours are now being made (especially through the agency of the Archaeological Survey of the Egypt Exploration Fund) to collect materials for a thorough investiga-

tion of the hieroglyphic writing, and some of the main results at present attained form the subject of the present paper.

The writing is made up of ideographic and phonetic elements; in other words, the pictures appeal in a sense both to the eye and to the ear. They are employed as word-signs to express whole words, as phonograms to express sounds as parts of words, and as determinatives. (A determinative, it may be explained, is written after a word to indicate its meaning pictorially when that might be otherwise uncertain.)


Before dealing further with these three functions of hieroglyphs, we will notice one particular form of phonogram from which much might have been expected, that is, the phonogram representing a single sound—the ALPHABETIC sign. The Egyptians never took full advantage of this great discovery. At a very early period they developed a practice of representing single sounds by means of an alphabet of twenty-five letters, which would have enabled them, had they so chosen, to write solely in these alphabetic signs, with a determinative added at the end of each word. Large numbers of words are actually found alphabetically spelled, especially in early times. The use of alphabetic signs probably originated in the desire to express separately the formative and flexional consonants that modified the meaning of words, and the signs being found useful, their employment rapidly extended. But no advance was ever made towards exclusive alphabetic spelling; its adoption would have meant a complete change in the old system, and this was not to be expected from so conservative a people as the ancient Egyptians, who attributed their writing to the invention of the god Thoth himself. Moreover, the artist-scribes fully appreciated the decorative effect of hieroglyphic writing; to have limited their choice of signs by alphabetic spelling would have constituted a serious loss to that highly important body. On the other hand, the abbreviation of writing towards a cursive form employed for the longer text seems, as a matter of fact, to have led the scribes into greater and greater complications. They sought clearness and definition, not in simplicity, but by multiplying checks on error; and more or less they achieved their purpose. But the results were extremely cumbersome; for example, *hs*





“praise,” is written  *h-hs-s*, *i.e.*, with three phonetic signs followed by the determinative of speech. And, to take an extreme instance, the syllable *nr*,

in ordinary hieroglyphics of the middle period, is often written  *n-nr-nr-v*,








i.e., with four phonetic signs. Any single sign in abbreviated or cursive writing might easily be mistaken for some other in the immense signary, and as long as the recognition of a word depended on the precise recognition of a single sign rapid writing would easily be misread. But when words were spelled by a number of signs, so grouped as to be unmistakable however clumsily drawn, the scribe could wield his pen freely, and was satisfied.

The alphabet rendered only consonants and semi-consonants. The nature











of the language was such that the inflexions were produced partly by internal vowel changes, partly by additions of consonants and vowels at the beginning or end of the root. When a word-sign only was employed to represent a word, it would be very difficult to indicate the internal vowel changes. In times beyond our ken, presumably no changes whatever were shown, the simple word-sign being employed for all forms of a root; but in course of time it became customary to mark the flexional and other additional consonants by separate signs. These consonants were the feminine ending *t*, a noun-formative *m*—prefixed,—and *s*, the causative prefix to verbs, all three being of great importance for pronunciation and the expression of meaning. Similarly, the pronominal suffixes had to be expressed by alphabetic signs. Internal changes of vocalization were so much more difficult to indicate than external additions of consonants that no attempt seems ever to have been made in that direction. It may be imagined that external vowel changes would, however, be shown, and indeed there is evidence of it. A prefixed vowel, though generally not marked at all, was in some texts—both early and late—indicated by , which here has

the function of the Arabic *hamza*. Whether the endings , , , , represent vowel endings *u*, *i*, or whether they retain their usual semi-consonantal values, *w*, *y*, is at present uncertain. It is probable that when serving in certain positions as radicals, these letters were pronounced as vowels, and hence the development of their use as vowel-endings would easily arise.


To return to the classes of the signs. Primarily WORD-SIGNS represent the name of the objects or actions pictured by them. By transference word-signs can come to represent any word having the same consonantal root.






PHONOGRAMS representing sounds which are used as parts of words are derived from word-signs; until a very late period these were limited in number. They fall into two groups: 1st, phonograms representing single sounds, which we may call *alphabetic or uniliteral*; 2ndly, those representing two sounds, which we may call *biliteral or "syllabic."* To take instances of each: the arm  is the name for "arm," or rather "hand" (''); it is also transferred as word-sign for "district"; as an alphabetic phonogram it stands for ' (Heb. *y*) in a multitude of words. As an instance of the second class of phonograms we have the draughtboard  set with its pieces; this pictures the idea of "being set," *mn*, and is the word-sign for "firm," "established," also by transference, it is used as the name *mn*, a kind of measure, and for the word *mn* meaning "a certain person," "quidam," etc., etc., words having each the same radical consonants (*m*, *n*) as *mn*, "established." As a phonogram  enters into the spelling of hundreds of words, e.g., *mnh*   "chisel,"  , the name of the god Amon.

DETERMINATIVES may be either specific or general, e.g., the determinative of the word for the African horizontal-horned sheep (*Ovis tragelaphus*) may be

the specific figure of that sheep  or the general figure of the hide of an animal , which serves as determinative for quadrupeds of all kinds, and even for four-footed reptiles. Of course, most of the common determinatives are specific or general according to their use. The following examples are very frequent:  determinative of proper names of men;  ditto of women;  determinative of peoples;  of eating;  of speaking;  of sitting;  of falling;  of violence.

A single sign may combine all the functions of word-signs, phonograms, and determinatives.

As regards word-signs, in general the connection of the meaning of the word with the picture is obvious enough once it is pointed out; but there are often difficulties in discovering it, the first being to identify the action or object depicted; the second, to find the word which formed the connecting link between the picture and its word-sign value. For instance, the sign  is pretty clearly a basket when depicted in colour with the detail of woven rushes; its word-sign value *nb*, signifying "master," "all," "swim," "melt," has long been recognised, but out of all the long miles of hieroglyphic and hieratic writing that are known to us, the key to this value is preserved only in a single passage of the Pyramid texts, and it is simply this: the name of a rush basket is *nb.t*. As for the *t* in *nb.t*, it is only the feminine termination of the word, not a radical letter, and so can be neglected.

As a general rule it is the root of a name, and that in its shortest form, which determines the phonetic value of the sign representing it. Hence, flexional consonants are disregarded in the matter. Not only so, but when a consonant is doubled in the root it is reduced to a single consonant in the derived word-sign, at any rate when the latter is used (by transference) as a phonogram. Very often also the weak consonants and semi-vowels are thrown out. Thus, *e.g.*, the simple wooden hoe, ,  *hnn*, is word-sign for its name, but as a phonogram has the value *hn*—cf.  *hnb*, "land," etc. , a rope handle, probably *θθ* or *yθθ*, originally meaning "pull," "seize," is alphabetic for simply *θ*. , *q*, a slope of ground, from the root *q'* or *qy* "be high," is alphabetic simply for *q*.

It has often been supposed that the Egyptian alphabet was acrophonic in origin, *i.e.*, that the first sound in the name of the pictured object or subject was chosen as the alphabetic value of the sign. Some Coptic names seemed to favour this theory, but a knowledge of the early language has overthrown the few acrophonic derivations which had been proposed, and has already in some cases revealed the true derivations, showing that the values of the alphabetic signs were obtained in the same way as those of the biliterals. But the subject is still obscure in many of its details.

As the Egyptian roots seldom exceed three letters, there was little need for word-signs of more than three letters, and none for phonograms of more than two. There is, however, one phonogram of obscure origin, used for a grammatical ending only, which possibly contains three consonants, namely, the eagle, *tyw*.

Having thus indicated the nature of the Egyptian writing and something of the uses and origins of the signs, let us consider briefly what changes took place during the thirty or forty centuries for which we have monumental evidence of its use. If we compare the short inscriptions of the First Dynasty, which Professor Petrie has this year found in such numbers at Abydos, with inscriptions of what may be called the classical period and onwards, even to Roman times, we recognise that the system upon which all are drawn up is essentially the same. No new principle whatever has been introduced. The main noticeable point of difference is that in the later writing the spelling is far ampler, and consequently the writing is vastly more free; and while in the First Dynasty, and indeed throughout the Old Kingdom, determinatives were very sparingly used, in late times they abounded. By the time of the Sixth Dynasty long texts were commonly written and inscribed, and in the Middle Kingdom the Egyptian hieroglyphic system had assumed its most perfect shape for clearness and neatness. Apart from certain archaistic revivals or lapses into vulgar modes, this was the form which henceforth served as the model for monumental spelling. There were, of course, periods of decline, during which writing suffered much. Monumental hieroglyphs being at a discount, the origins of the signs were forgotten; but periods of prosperity, by reviving the demand for decoration, restored the art of hieroglyphic writing nearly to the height from which it had fallen. In the great decline of taste under Ptolemaic and Roman rule the inscriptions are crowded with fantastic inventions of new values and new signs.

As for cursive writing, this was practised as far back as the First Dynasty; by the end of the Old Kingdom it was freely used, and persisted for religious texts into Ptolemaic times. It is known to us as *HIERATIC*. About 1000 B.C. a small and highly developed cursive known as *DEMOTIC* began to be employed and continued in use for business purposes until Egypt, under foreign rulers, became bilingual. Then it became manifest that the simple Greek alphabet, with its full notation of vowels and phonetic spelling, had great advantages over the vowel-less and clumsy groups of the native script. In the second century A.D. astrologers and others, who were probably not natives of Egypt, essayed to render the Egyptian language in the Greek character with the aid of a few signs borrowed from the demotic alphabet to express special Egyptian sounds, such as *dj*, *tsch*, *kh*, *f*, and hard *h*. Thus the foundations of *COPTIC* writing were laid. This change was significant of the waning power of the old religion, and in the fourth century A.D. Christianity, triumphing over paganism, quickly exterminated the ancient system of writing altogether, and Coptic became universal.

With the recent discoveries of Mr. Arthur Evans in mind, none would dare to prophesy merely negative results from the archaeology of the future as regards the history of writing; but as yet we have no clear evidence that Egyptian writing was either borrowed from or borrowed by any country outside the Nile Valley. Conquest and commerce occasionally carried it into Syria, Asia Minor, the Greek Islands and elsewhere, but we fail to find it established anywhere beyond Egypt except in Ethiopia. In that country it acquired a special character, and may have made an important advance in a form of demotic, long known but as yet undeciphered. If the early stages of Egyptian writing were developed in Egypt itself, it is curious that during the whole of the historic period it failed to develop any new features in the land of its birth; yet it certainly has the appearance of being entirely native to the valley of the Nile.

What its significance may be in the history of the world we cannot at present tell. Some have thought that the Phœnicians borrowed its alphabet, and that through them our books and our letters are recorded in signs which are in origin Egyptian. But all such theories are as yet entirely hypothetical.

Nevertheless, Egyptian writing may be examined with interest as an unique illustration of the history of writing in general. We find in it a well-developed script fully preserving its pictorial origin. The decorative instinct of the Egyptians, as well as their conservative nature, led them to retain the pictures and to represent them with full detail in monumental inscriptions for thousands of years after they had advanced to cursive writing. In the Chinese and Mesopotamian systems traces of the pictorial origin of the signs are still fairly clear, but it is doubtful whether those origins can ever be made out with definiteness and certainty in more than a very few cases. The remains of the Hittite system may indicate a history perhaps similar to that of the Egyptian. Cretan hieroglyphics we hope will soon yield their key to the far-sighted discoverer of them. While primitive writings are thus being recovered in quarters hitherto unsuspected, it is safer for the Egyptologist to refrain from speculation as to any foreign development of the system with which he is concerned. On the other hand, he may well endeavour to ascertain and expound its principles, so that workers in still newer fields of research may perchance derive from his labours solutions of some of their own difficulties.

Reference has been made to the change which is taking place in the position of Egyptology. Berlin is the centre of the philological study of Egyptian, and thanks to Erman, Steindorff, and Sethe, the Egyptian grammar has been worked out from very unpromising materials with wonderful success. The most remarkable result obtained by Sethe's great work on the Egyptian verb is to prove that the roots of Egyptian words in the vast majority of instances were in early periods trilateral. In this, as in other points, the structure of Egyptian, especially in ancient times, has many analogies to Semitic, and the cautious Erman permits himself to assert that at a period earlier than that of any inscribed monuments at present known to us, Egyptian was a Semitic language. He considers that

it was imposed on an African people by a small body of conquerors, and that it changed so rapidly in pronunciation that few obvious connections with Semitic are now seen in its vocabulary, while the Semitic conjugational forms were generally replaced by periphrases. The accumulating proof of some such historical relationship of the Semitic and Egyptian tongues must greatly affect our ideas of the early history of civilisation.

Having established the knowledge of Egyptian grammar, the great Berlin School is now devoting its energies to the formation of an exhaustive verbal index to the inscriptions and papyri—exclusive of demotic and Coptic. This work, now in its third year, is being carried out on a very ingenious plan, with the view of ultimately publishing from it a complete dictionary. Besides the German staff, two English students, one Dane, and one American are now engaged in the undertaking, and more workers will co-operate as time goes on. Already some striking results have been obtained. When this great task is completed, Egyptian philology will indeed have been placed on a firm footing.

THE METRIC SYSTEM OF IDENTIFICATION OF CRIMINALS, AS USED IN GREAT BRITAIN AND IRELAND.

BY J. G. GARSON, M.D.

[PRESENTED 5TH JUNE, 1900.]

SIX years have elapsed since a Committee, appointed by the Home Secretary of State to inquire into the best means available for identifying habitual criminals, presented their report, and the recommendations they made were adopted by the British Government. During this period the system then inaugurated has been steadily maturing, and the time has come when we may, with advantage, review its progress and critically examine its efficacy.

Soon after the publication of the report of the Committee, the Home Secretary did me the honour to appoint me scientific expert to organise the introduction of the new system, and my duties in connection with it have continued without interruption ever since.

As the report just mentioned formed the basis from which the system now in use was started, it is necessary to recapitulate its salient outlines, in order to complete the history of the introduction of the metric system of identification into England.

The Committee consisted of Mr. C. E. Troup, C.B., then in the Criminal Department of the Home Office, as Chairman; Major A. Griffiths, then one of H.M. Inspectors of Prisons; and Mr. M. E. Macnaghten, the Chief Constable attached to the Criminal Investigation Department of the Metropolitan Police, with Mr. H. B. Simpson of the Home Office as Secretary. While the Committee thus constituted did not include any scientific expert, it was composed of experts of high standing in the various departments of the public service which have to deal with crime and criminals.

The warrant appointing the Committee directed them to inquire (*a*) into the method of registering and identifying habitual criminals then in use in England; (*b*) into the "Anthropometric" system of classified registration and identification in use in France and other countries; (*c*) into the suggested system of identification by means of a record of finger-marks; to report whether the anthropometric system or the finger-mark system could, with advantage, be adopted into England, either in substitution for, or to supplement the then existing methods, and, if so, what arrangements should be adopted for putting them into practice, and what rules should be made under Section 8 of the Penal Servitude Act, 1891, for the photographing and measuring of prisoners.

The terms of reference were thus amply wide enough to cover the whole field, and a study of the report shows that the whole question was gone into by the Committee and considered with the greatest care and thoroughness.

It is, perhaps, necessary to state the reason why it is important that habitual criminals should be identified. In all civilised countries, it is a well-recognised principle of justice that persons who make crime their calling or profession in life, should be dealt with in a different manner from one who, for the first time, commits a criminal offence. This being so, it is not only important to know the antecedents of a prisoner about to be dealt with by law, but also that no mistake shall be made as to his identity, and, above all, that an individual who is not an habitual criminal, and innocent persons, shall not be by error identified as being one who is an habitual criminal.

The method by which identity is *proved* in the criminal courts of this country is dependent upon the personal recognition of the prisoner by police or prison officers, and, till the introduction of the metric system, it was also the basis by which identity was *discovered*. In country districts and in the smaller cities and towns, local criminals are well known to the police, and information as to new settlers is soon obtained. The case is quite different in large cities and towns where individual knowledge of the in-dwellers becomes a matter of impossibility. There are criminals also, who, after conducting operations in one district for a time, find it advantageous to themselves to transfer the field of their labours to some new place, almost invariably a large city, where they are unknown to the police, and may ply their nefarious mode of life for a while with more or less impunity.

To assist the police in identifying habitual criminals, a register was specially established by Parliament, in 1869, for general use throughout the country, in which are entered the names, description, crime, and other particulars, of every convict, and "person convicted on indictment of crimes, a previous conviction of a crime being proved against him," discharged from prison during the year, and a copy of it is supplied to all police forces and prisons throughout the country. A register of the distinctive marks on the persons of habitual criminals was also instituted and distributed with the register. The various police forces have also instituted registers of their own, printed descriptions of noted criminals, and the like, to assist their officers in recognising persons who are habitually engaged in crime. The photographs of such persons have likewise been collected for several years, and, in the Metropolitan Police Office, may be numbered by tens of thousands, if not by still higher figures. Systematic observations and inspections, by police and prison officers, have been instituted of arrested persons, with a view to the recognition of such of them as have been previously convicted, and inter-communications between police forces have been freely resorted to with the same object.

Notwithstanding the best efforts of the police and prison officers, mistakes in identification have occasionally occurred, and a considerable number of old

offenders pass through the Courts unidentified. Of the accuracy of these statements I have had good evidence during the last few years. Almost immediately after the introduction of the metric system into England, I was called to report upon the identity of a man who had been convicted of larceny and sentenced to a term of seven years' penal servitude. At his trial he had been identified as the individual who committed the larceny, with which he was charged by the shop-keeper who had been robbed, and by his assistant, and he was sworn to by prison officers as an old offender who had been in prison in England during certain periods. After conviction he stated, in a petition to the Home Secretary, that at the time of the larceny and during the periods he was said to have been in prison in England, he was undergoing a sentence of imprisonment in France. On inquiry being asked whether he had been measured before his discharge from the French prison, he replied in the affirmative, and gave the name under which he went at the time. His metric description having been taken here according to M. Bertillon's system, and a copy of the metric description of the individual he asserted himself to be having been obtained through the courtesy of M. Bertillon, a comparison of the two descriptions showed most clearly and conclusively that both referred to one and the same individual, and that consequently serious mistakes had been made by witnesses at his trial as to his identity; the conviction and sentence were accordingly quashed. Another case may be mentioned of mistaken identity occurring more recently, where a man convicted of robbery was identified as an ex-convict, but from our own metric office the true identity of the prisoner was found to be that of another convict who had been liberated on licence. The fact that a considerable number of old offenders escape identification at trial for subsequent offences is continually being demonstrated, as almost every month several cases occur, especially in the metropolis, of persons sentenced as first offenders, but who, on their metric description being sent to the Habitual Criminal Registry by prison governors dubious of their previous freedom from crime, or at the request of the police, are found very frequently to have not one but several previous convictions recorded against them, a matter of considerable importance under the First Offenders Act of 1897. The report of the Committee contains particulars of several cases of mistaken identity and failure to identify old offenders. I have, however, thought it well to mention the above incidents which have come under my own observation subsequently, and which go to prove the utility of our metric system and also its efficiency for the purpose for which it has been established.

When a criminal always gives the same name every time he is arrested, it is usually a comparatively easy task to trace his antecedents once he is on the Register of Habitual Criminals, even though he may move from place to place, but when he gives a different name on each occasion and at each place he is apprehended, the difficulty of identification under the old system from registers, descriptions, photographs and the like is very great, in consequence of the absence of any satisfactory classification of records being possible; hence it has been no

uncommon occurrence for a police force to arrest a prisoner against whom many previous convictions are recorded in the volumes of the Registers of Habitual Criminals carefully preserved on the shelves of their own office and diligently perused, without their being able to identify him from these registers. In the cases where identifications are made by the old system, success is obtained in many instances only after long and laborious search, and I cannot but think that chance enters very largely into the result when the prisoner is successfully traced; in other words it is much more by good luck than good guidance that he is recognised.

The Committee, as a result of their investigations, reported that the old system of identification, then in use, was not satisfactory, and left much to be desired on the grounds (a) of mistakes in identification, (b) failure to identify old offenders, and (c) the labour involved in making identifications.

They then proceeded to formulate what should be the essential features of any system suitable for purposes of identification of old offenders, and to examine the various methods which scientific study of the question has made available for this object.

The essential features required in such a system they define as "a means of classifying the records of habitual criminals, such, that as soon as the particulars of the personality of any prisoner (whether description, measurements, marks, or photograph) are received, it may be possible to ascertain readily, and with certainty, whether his case is already in the register, and, if so, who he is." Such a system the Committee believed to be unattainable by further development of the existing methods then in use, and that, if it is to be found at all, it must be found in the application of some such scientific method as those on which they were directed to report.

In proceeding to the consideration of the metric system, originated by M. Bertillon in Paris, and the proposal of Mr. Francis Galton to utilise the impressions of the fingers for purposes of identification, the Committee entered upon the scientific part of their inquiry, and I cannot refrain from taking this opportunity of expressing my high appreciation of the thoroughness with which they have mastered the details of these systems, and the principles whereon they are founded, brought before them by the various scientific witnesses examined, likewise on the soundness, from a scientific point of view, of the conclusions arrived at regarding the respective merits of each system.

The Bertillon system of identification has been so much before public notice of recent years, that I need not go into it here in detail, particularly as I shall have to describe, later on, the arrangement of records followed in England under the new system, which is, in its main features, the same as that used in France and other countries. I may, however, state briefly that it consists in recording the measurements of certain parts of the body which practically do not vary in size after adult life has been reached, the exact colour of the eyes, the shape of certain features of the face, a photograph showing the full face and profile

exact details regarding scars, tattoo and birth marks, and other particulars as to the individuality of the prisoner, and his criminal record. More recently, also, since the introduction in this country of the use of finger-prints, M. Bertillon has added the impressions of the first four digits of the right hand to his metric descriptions.

The cards bearing these records upon them are arranged on certain mathematical principles, according as the size of the parts of the body measured is small, medium or large, in what are termed "search cabinets," in a given order, without any reference to the name of the individual to whom it relates. A duplicate description of the prisoner is also classified alphabetically according to his name, but it is the first-mentioned classification which is one of the characteristic features of what is known as the "Bertillon System."

In order to find the card of any particular individual in the cabinets at any subsequent period, all that is required is to take a fresh metric description of him, and follow the same fixed line of procedure as was taken in storing the previous one. The measurements of the different parts of the body enable the very exact classification of the records requisite to be made, both in arranging them in the first instance, and in searching them subsequently for the record of any particular individual, while the other details as to the prisoner's personality place his identity or non-identity beyond question. The tripartite division of all measurements enables the search to be made with great rapidity, and the exact position in the cabinet of any previous record of the same individual to be determined with a minimum amount of labour in examining other records not relating to him.

This system, then, as far as regards measurements, is a very considerable advance towards fulfilling the requirements laid down by the Committee as essential for purposes of identification if absolutely invariable and accurate measurements could be obtained, but absolute perfection is not obtainable, all measurements being subject to some degree of error, either inherently connected with the parts measured, or from imperfection on the side of the measurer, besides which there may be error made in the classification of records. In practice, the amount of error arising from these different causes, if the system be properly worked and the measurers carefully looked after, is, as I shall be able to show, small and well within the margin required for efficiency.

The measurement of a part used in classification taken before the prisoner's discharge from prison, may be near the margin of a division, say the upper limit of the *small*, but being within the limits of that group, the record is placed in that division. Supposing the same individual be subsequently arrested and measured to ascertain if he is an old offender, and this time the measurer makes the same part slightly larger, so that now it falls within the limits of the *medium* division, search would be made in a different cabinet, or part of the cabinet, from that where the first record is situated with a negative result. In such a case, before we could say that a previous record of the prisoner is not in the collection, search

would have to be made in both the *small* and *medium* divisions. The same process would have to be gone through, with respect to all the other measurements that fall near the margins of divisions, so that a considerable number of searches may have to be made to determine the existence or non-existence of previous records. These *double searches*, as they are called, constitute the only difficulty in working this system, but fortunately, as I will show, do not greatly impair its efficiency, although they increase the labour in using it to a greater or less extent.

On the nature and variety of finger-prints, I have little to say in this Institute, where we have had on several occasions the benefit of Mr. Francis Galton's demonstrations on the subject. The Committee were much impressed with the efficacy of finger-impressions for purposes of establishing identity, as may be judged from the following sentences in their report:—"It seems impossible to insist too strongly on the absolute certainty of the criterion of identity afforded by the finger-prints. Considered merely as a test of identity, and not as a detective agency—there being no longer any question of classification—their use becomes at once extremely simple, and, in the hands of an expert, free from any danger of error. Apart altogether from their uses in tracing habitual criminals, it would be a very easy matter to use them much more extensively as a check to all identifications." By means of photographic enlargement, finger-impressions can be made so clear as to bring the power of comparing different sets with one another, and determining whether they are those of different persons or of the same person, well within the comprehension of the, intellectually, most poorly-gifted jurymen. On this point the Committee state—"In tracing a criminal the finger-prints would be of much assistance. For verifying identifications they would give a test, which, in the hands of a skilled person, would be unimpeachable." With these statements I most fully concur, and desire to emphasise the fact that they do not come from the pen of the scientific expert who might in the eyes of some people be considered to be prejudiced, but from a Committee of—may I say—laymen. To call special attention to this is the more necessary, because I find that a good deal of scepticism on the point exists in the minds of many persons who have to deal with evidence of identity as afforded by this source, and to whom the words of the Committee may appeal with some force of conviction.

When we come to deal with the use of finger-prints as a system of identification of criminals, including the classification of records and searching for previous descriptions of the same persons by means of the finger-prints, we find that serious difficulties arise, which, notwithstanding the labours of Mr. Galton and Mr. Henry, and, to a smaller extent, my own endeavours in that direction, have not been overcome, and which, I have reluctantly to admit, appear to me to be of such a nature as to prevent a thoroughly satisfactory system workable on the large scale we require in criminal work, without the assistance of measurements, from ever being possible. The chief difficulties to my mind may be briefly summarised as follows. The great number of intermediate forms of patterns on

the fingers makes it almost impossible even for an expert to be sure that he will always determine them as belonging to the same class and relegate them to it on all occasions. This difficulty is greatly increased if the impressions be not very clear and distinct—a desideratum not always attainable from a variety of reasons. To get adequate data for classification by finger-prints alone, the impressions of all the fingers have to be utilised, with the result that the chance of some of the impressions being defective or of intermediate pattern, and consequently of error in classification and subsequent search, is thereby greatly increased. The inequality in size of the classes, rendering it necessary to resort at once to a more or less intricate system of sub-classification of the more commonly occurring patterns, is distinctly a great drawback to convenient working in the systems of classification, already proposed, and one which it is not easy to see can, even by further research, be got over. Another difficulty, not easy of solution, arises when there is resistance on the part of the prisoner to having his finger-impressions taken. This last may be thought to apply equally well to measurements, but, as a matter of practical experience, it is found up till now that it is easier to get the latter with sufficient accuracy to enable the prisoner to be traced, than to get the prints of all the different fingers of both hands good enough for determining the location of the previous records of the prisoner which invariably exist in such cases. Under these circumstances, it is sometimes all we can do to decipher the impressions of one or two fingers for the purpose of making certain of his identity or non-identity. Again an acute criminal—and there are many of them—who cared to take the trouble to learn a little about finger-prints, might soon find out that it is the central portion or core which is of importance for identification purposes and essential for the classification of records, and might, by the application of caustics or fire, so scar that all-important spot in several fingers without detriment to the fingers themselves as to render his identification from a subsequent set of impressions impossible. It is true such a procedure would probably only serve him once. This would be impossible with measurements as he could not tamper with his head, or do more than attempt to trick the measurer while measuring the limbs, without serious permanent damage to himself. The number of *double searches* possibly required when two or more impressions of certain of the fingers are undecipherable from any causes in the most commonly occurring patterns is very great, owing to the number of sub-classes into which these have to be broken up, and the number of combinations of these latter which may have been present in the missing or undecipherable finger impressions.

The metric description of a prisoner as taken in England includes the following particulars:—(a) A general description of the individual; (b) Certain measurements of his head and limbs together with his height; (c) A photograph showing views of his full face and profile; (d) The principal scars and marks—natural and artificial—on his body and limbs; (e) The impressions of all the digits of both hands. These details are in all cases taken by prison officers, in the prison where the prisoner is

METRIC FORM : BACK.																																		
Name		RIGHT FINGERS.																																
Prison Register No.																																		
Prison																																		
Date of Measurements																																		
Signature of Measurer																																		
Governor's Signature																																		
1.—Right Thumb.	2.—R. Fore Finger.	3.—R. Middle Finger.	4.—R. Ring Finger.	5.—R. Little Finger.																														
LEFT FINGERS.		<p><i>Directions:—Before taking the impressions of the fingers, fold this Form exactly in two, and place the metal sheet between the folds.</i></p> <p style="text-align: center;">REMARKS.</p> <p style="text-align: center; margin-top: 20px;">Finger Formula.</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: center;">1.</td><td style="text-align: center;">2.</td><td style="text-align: center;">3.</td><td style="text-align: center;">4.</td><td style="text-align: center;">5.</td><td style="text-align: center;">6.</td><td style="text-align: center;">7.</td><td style="text-align: center;">8.</td><td style="text-align: center;">9.</td><td style="text-align: center;">10.</td> </tr> <tr> <td style="height: 20px;"></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td style="height: 20px;"></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> </table>			1.	2.	3.	4.	5.	6.	7.	8.	9.	10.																				
1.	2.	3.	4.	5.	6.	7.	8.	9.	10.																									
10.—L. Little Finger.	9.—L. Ring Finger.	8.—L. Middle Finger.	7.—L. Fore Finger.	6.—L. Thumb.																														

undergoing his sentence, or to which he has been taken on remand, and are recorded on a form 20·4 centimetres (8 inches) square, which is here reproduced, and also on a card 20·4 centimetres long by 10·2 centimetres (4 inches) broad, which is also shown. The essential difference between the two records is that on the card the impressions of only the first three digits of each hand are shown and no particulars regarding the prisoner's offence, hence its size is only one-half that of the form, a matter of considerable importance in storage.

The general description of the prisoner calls for few remarks or explanations. The age, place of birth, and occupation depend upon the veracity of the prisoner, which is most frequently not to be relied upon. The colour of eyes and hair and the complexion are stated in general terms. In the Continental forms much stress is laid upon the colour of the iris, which under the Bertillon system is used for classification and is divided into seven classes based upon its general colour when that is uniform, and that of its periphery and of the portion bordering on the pupil called the areola when these vary. The circumstances under which the metric descriptions are taken in this country in most cases preclude the possibility of having such details recorded with sufficient accuracy to render them of value. It was therefore wisely decided by the Committee that it was not desirable to burden the records with details beyond the general colour of the iris when viewed at a distance. The want of more information on this point has never been felt. The descriptions of the various parts of the face also recorded in detail by M. Bertillon are omitted in our English form, and we trust to getting such of them as are wanted from examination of the photograph.

The measurements of the head and limbs taken are all included in the Bertillon system. They consist of the dimensions of the following parts:—(1) The length of the head measured from the notch at the upper part or root of the nose, a point corresponding to the *nasion* in the skull, to the most prominent point on the back of the head, whether that point be situated on the median line or to one or other side of it. This measurement, it will be observed, corresponds with Virchow's length measurement of the skull. (2) The breadth of the head measured at right angles to the median line of the head wherever it is greatest but not including outer surface of the mastoid processes. (3) The breadth of the face between the outer surfaces of the zygomatic arches wherever it is greatest. This measurement was not formerly taken by M. Bertillon until after we had adopted it, but I am glad that he has now realised its excellency for identification purposes, and has substituted it on the French metric cards for the width of the ear which he formerly took¹; it is likewise included in the German and Austrian metric cards. (4) The length of the left middle finger, Digit iii of the Anatomical Series,

¹ This measurement is added as an Appendix in *Signalétique Instructions*, p. 259, an American translation, published in 1896, from the latest French edition of M. Bertillon's *Instructions Signalétiques*, published in 1893; the latter does not, however, contain any allusion to this measurement. It was adopted in our English system in 1894.

measured with the fingers bent at right angles to the metacarpal portion of the hand. (5) The length of the left cubit, taken from the posterior surface of the olecranon while that point is made prominent by bending the forearm on the upper arm at an acute angle, to the distal end of the middle finger. (6) The length of the left foot taken while the prisoner stands with the whole weight of his body resting on that foot only, and with the knee joint somewhat bent. (7) The height when standing erect.

In a general account of the system such as this is intended to be, it is unnecessary to go into further details as to how these measurements are taken.

The photograph showing exact full face and profile views of the prisoner are taken one-seventh of the natural size and according to the instructions of M. Bertillon in the section "*La Photographie Judiciaire*" of his work *Instructions Signalétiques*, 1893 ed.

The scars and marks on the limbs and trunk are likewise described exactly in the same manner as they are done in France, but the number of abbreviations used in describing them are not quite so numerous as those used by M. Bertillon. The particulars noted are (a) the nature of the scar or distinctive mark; (b) its form; (c) its size; (d) its direction; (e) its exact location. For facility of description the body is marked out into six regions, and the space assigned to each on the form and card is in proportion to the frequency with which marks occur upon them and the readiness with which they can be detected when present. I may say that in recording the marks and scars most attention is given to those which occur on the arms and hands and the face, while only the grossest deformities are noted on the lower half of the body, including the lower limbs, hence the small space assigned to the "Rest of body" (see p. 168). To secure the better and more uniform description of marks and scars, the details to be noted and the contractions to be used in so doing have been reduced to tabular form for the guidance and direction of the measurers, and will be found on the next page. The following illustrations will be sufficient to show that much time and trouble as well as space are saved by the descriptions of marks being taken in this abbreviated form:—

I. *Left Arm and Hand.* Sc rc of 0·9 hz at 10 ab elb ft ua. This written out at length reads—scar rectilinear of 9 millimetres long, horizontal at 10 centimetres above the elbow joint on the front of the upper arm.

II. *Right Arm and Hand.* Sc ov of 2·2/1·3 sl x at 6 bl elb bk fa=Scar oval of 2·2 centimetres long by 1·3 centimetres broad slanting externally at 6 centimetres below the elbow joint on the back of the forearm.

III. *Face and Neck.* Nv hairy cir of 1·0 at 3 ab i pt l eb=Nævus or hairy mole circular of 1 centimetre in diameter at 3 centimetres above the internal point of the left eyebrow.

IV. *Chest.* Sc cv x of 3·5 vr at 15 bl frk & 6 to r md=Scar curved with the hollow or concavity externally vertical in direction at 15 centimetres below fork of breastbone and 6 centimetres to right of the median.

The Finger Impressions are taken on the back of the form and card directly

LOCALISATION OF MARKS.

DESCRIPTION OF MARKS.

No. 1. Nature and quality of mark.	No. 2. Shape.	No. 3. Size.	No. 4. Direction.	No. 5. Distance and relation to nearest fixed point.	I & II.—ARM AND HAND.	III.—FACE AND NECK.	IV.—CHEST.
<i>sc</i> scar	<i>rc</i> rectilinear	Stated in figures	<i>h</i> horizontal	<i>at</i> to be written before the distance	<i>sh</i> shoulder joint	<i>fh</i> forehead	<i>fbk</i> fork of breastbone
<i>tat</i> tattoo	<i>cv</i> curved (add direc- tion of cavity)	Centimetres being the units, millimetres the decimals, thus: 1·5	<i>v</i> vertical	Distance to be stated in centimetres	<i>ua</i> upper arm	<i>tm</i> temple	<i>clv</i> clavicle or collar- bone
<i>nv</i> nevus, birthmark or mole	<i>wy</i> wavy, up and down, undu- lating	Length only to be given in all line marks, length and breadth in all other marks	<i>sl</i> slanting		<i>fo</i> forearm	<i>eb</i> eyebrow	<i>md</i> median line of body
<i>pt</i> point	<i>jg</i> jagged	<i>al</i> should be written before the figures of size	<i>i</i> internal, inside, inner, inwards	<i>ab</i> above	<i>wr</i> wrist joint	<i>rn</i> root of nose	<i>np</i> nipple
<i>fat</i> faint, indistinct	<i>br</i> broken line	Centimetres written thus: 1·4	<i>e</i> external, out- side, outwards	<i>bb</i> below	<i>h</i> hand	<i>nr</i> nostril	<i>nl</i> navel
<i>pr</i> prominent	<i>cr</i> circular	Occasionally it may be necessary to add after figures: <i>cm</i> centimetre <i>mm</i> millimetre	<i>u</i> upper, upwards	<i>ml</i> middle	<i>pa</i> palm of hand	<i>ch</i> cheek	
<i>sd</i> several—many	<i>ov</i> oval	Millimetres written thus: 0·5, 0·8	<i>d</i> downwards	<i>r</i> right [or to the right]	<i>j</i> joint	<i>chb</i> cheekbone	
<i>dp</i> deep	<i>ob</i> oblong	Occasionally it may be necessary to add after figures: <i>cm</i> centimetre <i>mm</i> millimetre	<i>f</i> frontwards or for- wards, front, in front	<i>l</i> left [or to the left]	<i>ph</i> phalanx	<i>trq</i> tragus of ear	V.—BACK.
<i>sm</i> small	<i>sq</i> square		<i>d</i> downwards	<i>de</i> and	<i>th</i> thumb	<i>lob</i> lobe of ear	<i>7^o</i> 7th vertebra
<i>snip</i> smallpox	<i>trgl</i> triangle		<i>fr</i> frontwards or for- wards, front, in front		<i>m</i> mid-finger	<i>ml</i> mouth	<i>md</i> median line of body
<i>amp</i> amputation	<i>irr</i> irregular (not to be used for linear marks)			(for other contractions see "Direction") No. 4	<i>rf</i> ring-finger	<i>lrx</i> larynx	
<i>k</i> ankylosed, stiff	<i>shp</i> shaped				<i>pt</i> point, end (of eyebrow, chin)	<i>agl</i> angle, corner (of eye, mouth, jaw)	Names of other parts of the body must be written in full, for example: <i>jaw, chin, nose, &c.</i>
<i>st</i> somewhat, slightly					<i>bf</i> between thumb and forefinger		

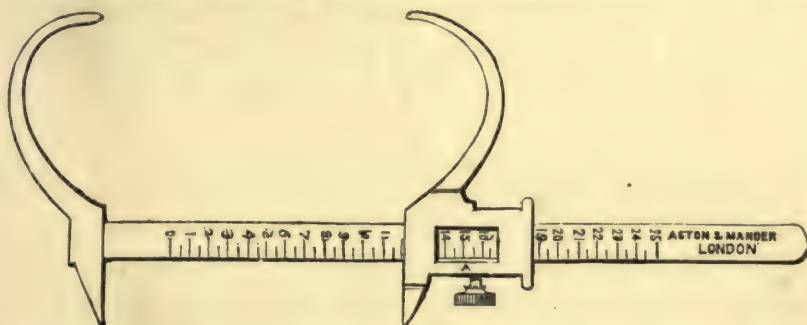
EXAMPLES.

<i>sc</i> scar	<i>rc</i> rectilinear	<i>of 0·9</i> of 9 millimetres	<i>h</i> horizontal	<i>at 10·</i> <i>ab</i> <i>dl</i> at 10 cm. above elbow joint	<i>ft ua l</i> on the front of the left upper arm.
<i>sc</i> scar	<i>ov</i> oval	<i>of 2·2</i> <i>1·3</i> of 2·2 cm. long by 1·3 cm. broad	<i>sl</i> <i>x</i> slanting externally	<i>at 6·</i> <i>ld</i> <i>dlb</i> at 6 cm. below the elbow joint	<i>dk fa r</i> on the back of the right forearm.
<i>sc</i> scar	<i>V shp</i> V shaped	<i>of 1·2</i> <i>0·8</i> of 1·2 cm. long by 8 millimetres broad	<i>v</i> vertical	<i>on dk 2^o M i</i> on the back of the second phalanx of the middle finger of the left hand.	
<i>sc</i> scar	<i>rc</i> rectilinear	<i>of 1·4</i> of 1·4 cm.	<i>sl i</i> slanting inwards	<i>on dk 3^o F r</i> on the back of the 3rd joint of the forefinger of the right hand.	
<i>nv hairy</i> nevus, or mole hairy	<i>cr</i> circular	<i>of 1</i> of 1 cm. in diameter	<i>v</i> vertical	<i>at 3·</i> <i>ab</i> at 3 cm. above the internal point of the left eyebrow.	<i>l db</i>
<i>sc</i> scar	<i>cv</i> <i>z</i> curved with cavity external	<i>of 3·5</i> of 3·5 cm.	<i>v</i> vertical	<i>at 15·</i> <i>ld</i> <i>7^o d</i> <i>6^o r</i> <i>and</i> at 15 cm. below the 7th vertebra and at 6 cm. to the right of the median.	
<i>tat</i> tattoo	<i>and/or</i> anchor	<i>of 5·</i> <i>4</i> of 5 cm. long by 4 cm. broad.	<i>v</i> vertical	<i>at 10·</i> <i>ld</i> <i>fbk</i> <i>d</i> <i>6^o r</i> <i>to l and</i> at 10 cm. below fork of breastbone and at 9 cm. to the left of the median.	

from the prisoner's hands. As it is the pattern on the palmar surface of the distal section of the digit which is of importance, the impression of that portion only is recorded. This is done by spreading a thin layer of printer's ink on a smooth polished metallic plate with an ordinary printer's hand roller, and applying the fingers lightly to the plate, so that the tops of the ridges on the surface of the skin become covered with ink, while the sulci between them remain uninked. The fingers are next gently laid on the paper for a moment and then removed with the result that a series of black lines, corresponding to the tops of the ridges of the skin and clear spaces corresponding to the sulci between each of them, remain permanently recorded on the form or card. It has been found necessary to take on the form a double set of impressions of the digits of each hand, except those of the thumbs, namely, daubed prints of the outer four digits which are impressed on the upper part of each half of the form, and rolled impressions which are placed in the spaces indicated across the middle and lower edge. The reason for this is two-fold. In the daubed impressions it is often found that owing to one or more of the fingers not being quite straight or the core or centre of the pattern not being always quite medianly placed, a portion of the surface which is necessary in the decipherment of the pattern has not come in contact with the paper, and in order to get the whole impression the finger has to be rolled from side to side as is done in the second set of impressions taken. Those then are the more important for determining the finger formula. But a mistake may easily be made by repeating the impression of one finger twice, or placing the impression in the wrong space. The daubed impressions afford a ready means of detecting errors of this kind, as it is not possible to alter the sequence of the fingers when taken together in series. Moreover, by having the two sets of impressions to compare with one another, it is often possible to determine the pattern when it is defective in the one or the other set. I have set forth the reasons for taking the double set of impressions on the card because by some Continental authorities it has been said that in England we devote too much space to the finger-prints and that the rolled impressions are quite sufficient. On the card only the rolled impressions of the thumb and two following digits of each hand are recorded, because having the impressions of all the fingers doubly imprinted on the form, it is only necessary to have a few fingers to compare when making search for previous records in order to determine identity or non-identity, and so obviate having to refer to the earlier form, which has been differently disposed of in the Central Office. Such then is the metric description taken of prisoners. This part of the work is done entirely in the prisons, of which there are 60 distributed over England and Wales.

The apparatus which is required in taking the metric descriptions, exclusive of the photographic outfit, consists of two calipers or sliding compasses for measuring the head and limbs; a 30 centimetre rule for measuring marks; a plate of polished copper, a 15 cm. printer's hand roller, for taking finger-prints, a standard rule and set square for measuring the height. The special furniture for the room consists of a stool for the foot measurement, which is also used as a seat while the

head measurements are being taken, and a trestle table for resting the forearm on, while the cubit is being measured: it also serves as a table on which to place the copper plate and form while the finger impressions are being taken. The apparatus and furniture are exactly the same as those used by M. Bertillon and figured by him, except the head instrument figured below, which is of my own design, and regarding which it is desirable to say a few words in consequence of its being different from the pattern adopted in France and some other countries. It is a repetition of the instrument used for measuring the foot, cubit and finger, for brevity called the limb calipers, except that while in the latter the cross arms are straight, in the head measuring instrument they are curved. Measurements are read off exactly at the same point and in the same manner on the two instruments, each millimetre between the measuring points is indicated on the graduated scale by the actual length of one millimetre. The Bertillon head calipers on the other hand are of the compass type, with the free ends curved, and the graduations are engraved on an arc of a circle attached to one of the limbs about midway between each end. The result of this is that the distance between one millimetre and another at the measuring ends is shown on the graduated arc where the measure-



ment is read, as only about *half* a millimetre. This makes the instrument somewhat difficult to read on account of the small space which intervenes between graduation marks on the scale indicating millimetres at the free ends of the instrument. Errors in reading are therefore much more prone to occur unless the measurer be extra careful and has very good eyesight or uses a magnifying glass. By careful attention to details of construction in the manufacture, between the stem and the sliding arm of the head calipers which we have adopted in England there is as little play as in the French instrument, and the former has the great advantage of being more easily read. During the six years it has been in practical use it has given me every satisfaction, and in several tests, instituted with the object of comparing the relative merits of the two instruments when placed in the hands of the officers who do the practical work of measuring, I have found that the results have been more accurate with the former, which I think fully justify the departure I have made in not adopting the more generally used instrument. But it may be suggested that the Indian modification of M. Bertillon's head calipers, which causes it to be automatic in action, might have

been adopted with advantage. I thought so also until I had a number of them in use, when I found that the device for procuring automatic action introduced a new source of error, quite as great as that which it was invented to avoid. While with a single instrument excellent and constant results are obtained, yet when several are used for measuring the same head, one after the other, different readings are shown by the various instruments according as the index is tighter or slacker in its movement and according as there are irregularities in the arc, although the pull of the spring which draws the limbs of the calipers together may have the same strength in each instrument. No doubt irregularities on the arc could be remedied by having it cut by machinery, but the cost of this would be quite out of proportion to the number of instruments required, and the liability to errors in reading which I have previously indicated to be present in the original instrument would still remain. I was, however, so favourably impressed with the automatic idea, that I had made by way of an experiment an instrument in which the compass legs were prolonged beyond the points of measurement, and the graduated arc was placed at their extremities so as to give a reading on the arc equal in length to 1·5 millimetres for every millimetre indicated at the measuring points, and so make the instrument more sensitive. The experimental instrument was not a success, however, as it was too large and clumsy for practical use, although satisfactory as regards reading the measurement taken by it.

The competency with which the metric descriptions are taken is a crucial point in connection with the metric system of identification. Unless the measurements are well and accurately taken it is inevitable that the system must break down, however well organised it may otherwise be. The training of officers in the work is therefore most important, and has been entirely done by myself. To train a few and then let them teach others at the respective prisons to which they are attached would be to court failure, as the work requires to be done with far too much exactitude to permit of such an arrangement being successful. The plan adopted has been to form a school of instruction at one of the London prisons, and bring officers from the various metropolitan and provincial prisons to it for instruction. The classes are composed of from 14 to 18 officers selected chiefly from the rank of assistant warders as young men of intelligence and good promise in the prison service. The size of each class is fixed at the limits stated, as being the number of pupils to whose instruction experience has shown me I can give the personal attention they require to produce the best results. The course of class instruction they receive lasts for three hours per day for a fortnight, and is entirely practical with the exception of that given on two days, when the general principles of the system, the use of the instruments and the method of taking measurements, marks and finger-prints, are explained. The rest of the time they are drilled till they are conversant with the various branches of the work, after which they have each to pass a test examination on 18 cases. Anything over a difference of 1 millimetre in the head length and breadth, the face-breadth and

the finger-length, of 3 millimetres in the cubit and foot lengths, and of half an inch in the height, is counted as an error. That is to say, any deviation from the exact size of the part of more than $\pm .5$ mm. in the first four measurements, of ± 1.5 in the cubit and foot, and of $\pm \frac{1}{4}$ of an inch in the height are counted as errors. The maximum number of errors a candidate may have and yet pass the test is 18, on any greater number than that he is rejected as a measurer. After the officer returns to the prison to which he is attached, he has to do a certain number of metric descriptions for practice so that he may gain proficiency in his work, and when he begins to take descriptions which are to be registered for permanent record, he is set to work in conjunction with a more experienced officer than himself.

The number of male officers attached to each prison who have been qualified for the work of taking the metric descriptions and are engaged in doing it, is not less than two nor more than four according to the size of the prison. The total number of male officers required for the metric service in the prisons of England and Wales is about 150. Besides these, at the larger prisons, a certain number of female officers have been instructed in the work for taking the metric descriptions of female prisoners. They go through exactly the same course of training as the male officers, and the work they do is thoroughly satisfactory. At the smaller prisons, the measurements and finger-prints of female prisoners are taken by male officers, while the marks are taken by female officers who have gone through a course of instruction in this part of the work only. Altogether the metric staff in the prison service numbers about 200 male and female officers distributed over 60 different centres, only four of which are situated in the metropolis.

It will be obvious that unless some supervision be exercised over the work of so large a staff, spread over the whole country, their measurements would soon degenerate in accuracy, and show variations much greater than the standard, previously indicated, required for class work. Apart from actual errors some of the staff will come to take the measurements more tightly than they should be taken, while others will diverge in the opposite direction and take them too loosely. That all the staff shall continue to work accurately and with the same touch is most essential for the success of the metric system of identification. Provision for this all-important detail has therefore to be made. As taking metric descriptions is decidedly technical work requiring special knowledge, it cannot be expected of the governors of prisons to be able to supervise it at their respective prisons. It is essentially the province of the instructor or some person specially skilled in anthropometric work to do so. I have accordingly done it hitherto myself. For this purpose I have each year visited the prisons and made each member of the measuring staff take the metric descriptions of two, three, or more prisoners, independently, before me, after which I have tested their work. Defects in method or accuracy thus brought to light are pointed out and forthwith rectified. Whenever an officer is found to have any difficulties, these are explained, and if his work is bad he is stopped altogether from taking any more descriptions in future or at least until he has again become efficient by attending

TABLE I.—RESULT OF REMEASUREMENTS DURING 1897.

Measurements.	0 mm.	1 mm.	2 mm.	3 mm.	4 mm.	5 mm.	6 mm.	Total cases.
Head length	274	204	64	11	3	—	—	556
Head breadth ...	262	229	52	13	—	—	—	556
Face breadth	260	224	65	6	1	—	—	556
L. mid finger	240	220	80	16	—	—	—	556
Left cubit	208	178	119	35	7	6	3	556
Left foot	221	170	84	57	17	7	—	556

ABOVE RESULTS STATED IN PERCENTAGE.

Head length	49·3	36·7	11·5	2·0	·5	—	—	100
Head breadth	47·1	41·2	9·4	2·3	—	—	—	100
Face breadth	46·7	40·3	11·7	1·1	·2	—	—	100
L. mid finger	43·2	39·6	14·4	2·8	—	—	—	100
Left cubit	37·4	32·0	21·4	6·3	1·3	1·1	·5	100
Left foot	39·8	30·6	15·1	10·2	3·0	1·3	—	100

TABLE II.—AMOUNT OF VARIATION PER CENT.

	Nominally correct.	Error.			Total error.	Nominally correct.	Error.
		1st deg.	2nd deg.	3rd deg.			
Head length	86·0	11·5	2·0	·5	14·0	—	—
Head breadth	88·3	9·4	2·3	—	11·7	—	—
Face breadth	87·0	11·7	1·1	·2	13·0	—	—
L. mid finger	82·8	14·4	2·8	—	17·2	—	—
Left cubit	97·1	1·3	1·1	·5	2·9	90·8	9·2
Left foot....	95·7	3·0	1·3	—	4·3	85·5	14·5

another class of instruction for a longer or shorter period. Besides this, a close watch is kept at the Central Office on all metric descriptions of prisoners of whom there are previous records, and the earlier measurements are compared with the later ones, to ascertain how they agree, and if the latter disagree in any particulars beyond the limits already mentioned the form is sent back to be checked and have any error, if error there be in it, rectified. The tables on p. 178 show the degree of accuracy and of error which was found in the descriptions received at the Central Office during 1897, of prisoners of whom previous metric descriptions had been registered there.

The first column of the upper half of Table I gives the exact number of cases in which each of the several measurements agreed entirely with those previously recorded of the same individual taken in almost every case by different measurers and in different prisons. The number of instances in which there was a variation of one millimetre is shown in the second column, of two millimetres in the third column and so on till the variations are exhausted. In the lower half of the same table these figures have been reduced to percentage. As the exact dimension of any part of the body measured may lie half-way between one millimetre and the next, and as no account is taken of fractions or decimals of a millimetre, that is to say, they are not recorded, it necessarily follows that the tighter or slacker measurement will be entered according to whether the higher or lower millimetre is, in the judgment of the measurer, the more nearly correct; hence a plus or minus variation of $\cdot 5$ of a millimetre, equal to one millimetre, is permitted by M. Bertillon as nominally correct in the head length and breadth and in the length of the left middle finger. He has provisionally given the permissible error of the face breadth as \pm one millimetre, that is equal to a variation of two millimetres. I, however, consider that this dimension can be measured quite as exactly as the other three mentioned parts, and have therefore allowed a variation of only one millimetre for it (equal to $\pm \cdot 5$ millimetre) as permitted in them. The results shown in the tables bear out, I think, the correctness of my contention, although I am quite aware of the fact that occasionally a case occurs in practice where the face is somewhat fleshy, or more correctly speaking fat, in which it is difficult to measure exactly and where a variation of two millimetres might be permissible without error; but these instances are quite exceptional. The cubit and foot cannot be measured so exactly as the head, hence M. Bertillon allows a permissible \pm error of 1·5 millimetres giving a variation of three millimetres. I have accepted his limits of permissible error in the cubit and foot, but I think that it is rather a liberal allowance, particularly as compared to what is permitted in the other measurements. A variation of two millimetres in the former would be more in keeping with that permitted in the latter, as will be seen from the last two columns of Table II. In Table I a thick black line has been inserted to separate the nominally correct from the actual error in the several measurements, and after the two millimetres variation of the cubit and foot I have shown by a broken line where error may reasonably be considered to begin if the same

strictness is followed respecting these measurements as is done with the previous ones. But the question may also be raised on the results of this table whether a variation of one millimetre is not too strict for the head and finger measurements. If M. Bertillon's idea be correct that two millimetres variation is the nearest we can reasonably expect to arrive at in relation to the face breadth, then I think it follows that a variation for the head length and breadth and the finger length is rather too strict. On the whole, I am inclined to consider that a variation of one millimetre in the first four measurements and of two millimetres in the last two is a good standard of nominal correctness and that above these limits preventable error begins.

The higher percentage in error in the measurement of the foot revealed in this table has led me to modify somewhat the procedure M. Bertillon gives in measuring it, or rather to make a slight preliminary addition to his method of procedure. Those who are familiar with his plan will recollect that he directs the prisoner to place his foot on the measuring stool, and stand with the whole weight of the body on the left foot while the measurement is being taken, the left knee being meanwhile bent somewhat, the right limb suspended in mid-air and the body steadied by the right hand being rested on a handle attached to the trestle table. In young persons there is usually not much difficulty in balancing the body and keeping the left foot steady enough for the measurement to be taken with sufficient accuracy, but in middle-aged and elderly persons and in cases where the limbs have been affected by rheumatism or other malady it is not always possible for the prisoner to keep himself steadily balanced on one foot in the position indicated while its measurement is being taken. The preliminary procedure I have introduced is to make the prisoner place his left foot on the stool and bend the left knee till the front of it is vertically above the distal end of the great toe, the heel meanwhile resting firmly on the stool and the right foot on the floor. While in this position with the weight of the body supported by both limbs the left foot is measured and its size noted. After this has been done the left foot is then measured by the ordinary procedure of M. Bertillon, the result noted and compared with the former measurement obtained. The size of the foot should be greater when the whole weight of the body is resting upon it in M. Bertillon's method, but if the measurement first taken while the prisoner was standing with his weight supported by both feet is the greater, the measurer has a sure indication that he has not succeeded in getting the maximum length of the foot by the regular method, and that it must be taken again till he gets it properly. By the preliminary measurement he gains the important information that the length of the foot is not less than a certain figure by which he can check error in his regular measurement. Since I have introduced this procedure I have found that the number of errors made in measuring the foot by pupils while receiving class instruction has been diminished, and I trust that by its adoption as an ordinary routine in practice greater accuracy in the foot measurement is being obtained in the metric descriptions now being received.

The grosser errors shown by the tables are almost entirely due to mis-reading of the instrument, the measurement of the part having been accurately taken or with only a minor degree of error. This is clearly due to carelessness, and may I hope become less as the officers gain greater experience in the work.

The nett result shown by the tables is that the error in taking the six measurements amounts to 10·6 per cent. This is, on the whole, I consider, very satisfactory, seeing that in several prisons the officers had not had much experience in the work, and that most of the previous measurements with which the later ones were compared were taken by officers who were first instructed in the system and were generally older men than those who are now employed on the work. My experience as an instructor has been that the instruments are much more efficiently handled by younger men than by the older officers, there are, of course, a few exceptions in favour of the latter to this general rule. In younger men the joints of the arms and hands are much more supple, and dexterity in the use of the instruments comes much more easily than when the work is taken up for the first time during middle life. This is especially noticeable when drilling men in the method of measuring the head length, which is to the inexperienced perhaps the most difficult of all the measurements to take correctly, in consequence of the point of one arm of the calipers having to be held steadily against the root of the nose while the other limb is being moved up and down on the back of the head searching for its most prominent part.

The prisoners whose metric descriptions are taken in prison before their discharge for registration at the Central Metric Office are (*a*) those who have been sentenced to penal servitude; (*b*) those who have been sentenced to a term of imprisonment to be followed by a term of police supervision after their release; and (*c*) those who have been sentenced to a term of imprisonment after conviction on indictment of crime, previous conviction of crime having been proved against them at the trial. In other words those persons who come under (*a*) the 5th; (*b*) the 8th; and (*c*) the 7th sections of the Prevention of Crimes Act. Besides those whose descriptions are registered as a matter of course, the registrar may register the metric description of any other convicted criminal prisoner who, to the best of his judgment, has probably embarked on a life of crime, and regarding whom information may probably be wanted subsequently by the police.

We have now to consider how the metric descriptions of the above prisoners are disposed after they have been received at the Central Office. To accumulate records of any kind is of little use unless they be so arranged as make it possible to refer to any one individual record whenever it is wanted. This is the great merit of the system with which the name of Bertillon is so honourably connected, and which places it before all other systems in that respect. Once the record sought for has been found, identity can be proved or disproved perhaps with greater certainty by other means than by the measurements.

The metric form has a serial number for each year impressed upon it, and is stored according to that number in an ordinary drawer, a card index, arranged

alphabetically according to prisoner's names, whereon is inscribed their register number, is also made for easy reference and kept till the end of each year, when a name index is compiled from it and printed of all persons registered during the year. Thus if a person when subsequently arrested gives the same name his metric form can at once be found by the card index, or if the year he was discharged from prison and his register number is known one can go directly to the metric form.

The metric card, after having the same serial number impressed upon it as the form and any other papers relating to the same individual, is disposed of differently. It is placed in a Search Cabinet according to a specific classification by the measurements of the individual and can only be found by the measurements on the form or measurements of the same person taken subsequently.

SMALL.			MEDIUM.			LARGE.			
SMALL.	MEDIUM.	LARGE.	SMALL.	MEDIUM.	LARGE.	SMALL.	MEDIUM.	LARGE.	
LARGE.	1	2	3	4	5	6	7	8	9
	10	11	12	13	14	15	16	17	18
	19	20	21	22	23	24	25	26	27
MEDIUM.	28	29	30	31	32	33	34	35	36
	37	38	39	40	41	42	43	44	45
	46	47	48	49	50	51	52	53	54
SMALL.	55	56	57	58	59	60	61	62	63
	64	65	66	67	68	69	70	71	72
	73	74	75	76	77	78	79	80	81

The construction of the Search Cabinet is as follows:—By two vertical partitions of thicker material than those which separate the individual drawers, it is divided into three main divisions each containing twenty-seven drawers; each of these main divisions is again sub-divided by two horizontal partitions of the same thickness as the vertical ones into three sub-divisions consisting of nine drawers in each. Again each of these three sub-divisions is further sub-divided first vertically and then horizontally on the same plan by thinner partitions into sets of three drawers. The cabinet is thus divided into eighty-one drawers. A final sub-division is made by inserting two partitions in each drawer and so dividing it into three compartments. There are thus five grades of divisions of the cabinet; each grade

bears a certain relation to each of the first five measurements on the metric card. Just as a tripartite system of division exists in the cabinet, so a tripartite division of each of these measurements is followed according as it is large, medium, or small. First then all cards in which the head length is small are assigned to one or other of the twenty-seven drawers of the left third of the cabinet, those in which the head length is large are disposed of in the twenty-seven drawers in the right third, while those of medium head length go into the middle third. The limits which determine under which of the categories a card falls, are fixed so as to give to each third of the cabinet an approximately equal number of cards namely, one-third of the total number it contains. Having determined to which of the three main divisions of the cabinet a card is to be assigned by the head length, we next take the head breadth. If this measurement be small the card will be placed in one of the lowest sets of nine drawers, if large it goes into one of the top sets of nine drawers, and if medium in one of the nine drawers of the middle three sets. The limits of *small*, *medium*, and *large* as regards the head breadth, are not the same for each of the three main divisions of the cabinet but are fixed in relation to the head length. That is to say, the short heads are divided up into three equal groups of *small*, *medium*, and *large* as regards their breadth, quite irrespectively of the breadth of head in the other two divisions. The same procedure is followed with each of the other two groups in turn.

Dealing now with each set of nine drawers. The face breadth is brought into use to determine to which vertical row of three drawers the card belongs. The row to the left contains the cards of small face breadth, that to the right those of large face breadth, while those of medium face breadth are in the middle three drawers. The limits of the three divisions of face breadth in each set of nine drawers are fixed on the same principle as before, according to the head breadth and have to be determined for each of the sets of nine drawers independently. By the length of the left middle finger which is classified into *small*, *medium*, and *large* for each division of face breadth, the drawer into which the card is placed is arrived at. If the finger be short the card goes into the lowest drawer of the vertical row of three drawers, if of medium length into the middle, and if long into the top drawer. Finally, the cubit lengths indicated on the cards assigned to each drawer being divided into three degrees of sizes, *short*, *medium*, and *large*, determines what cards are to be placed respectively in the front, middle or back sub-division of the drawer.

According to this plan of construction of the cabinet each measurement employed in classification gives three-fold powers of classifying records, and the range of variation of each portion of the body measured is divided with great exactitude into three degrees of size in relation to the size of the previous part, beginning with the head length. That measurement, which is the first, gives 3 classes, the second measurement breaks each of these in 3, giving 9 classes, the third measurement divides these 9 classes into 27, the fourth measurement divides the 27 classes into 81, the fifth measurement splits these 81 classes into

243, and so it goes on, each additional measurement taken multiplying the classification three times. By means of this system any number of records could in theory be divided up till the ultimate sub-division contains only such a number of cards as can be easily and quickly handled. In practice, however, there is only a certain limit to which this sub-division by using more measurements can be carried with advantage, in consequence of the variations which are liable to occur in measuring the parts used in classification when the same individual is measured at different times even though the work be done by the same measurer, and still more is this the case when different measurers are engaged on it, with the result that "double searches," already referred to at a previous part of this paper, become more frequently needed to find any particular record from another similar one.

The method by which the limits of the various groups are determined has now to be considered, but before doing so it is desirable to point out some of the anthropological factors which produce the range of variation met with in the parts of the body measured for the purpose of obtaining the classification just explained. The absence of absolute similarity in morphological development, which occurs in all races of men, as in all animals, and is so important a factor in evolution, gives a certain range of variation in actual size to every part of the body, even in what are termed "pure races," that is to say, in communities which have for sufficiently long periods been isolated from their fellow-men to have acquired, in consequence, more or less similar morphological characteristics. The range of variation in such a community may be less marked than in people who have not been so isolated. In these so-called pure races, also, there is a greater tendency for one part of the body to bear a more or less constant relation to another; thus we find the cephalic index, which expresses the percentage relation that the breadth of the head bears to the length, varies comparatively little in such races. In mixed communities, the range of variation of parts is considerable, and the co-relation of one part to another though increased is but slight. The inhabitants of a country may be "mixed" in different ways. They will show mixed characters as a whole, if two or more so-called pure races, or races possessing definite characteristics of their own, are settled in different parts of the country, and the metric descriptions of a certain number of each race be collected and amalgamated, or if the different races have been blended together by crossing with one another through several generations. In this latter case the mixture would show itself not only by the different parts of the body acquiring a mean form or size between the two ethnical extremes crossed, but also by the reappearance of the peculiarities of each race in different parts of the body, often of the same individual. To pass from abstract statements like the preceding to the concrete by giving a practical illustration. Let us suppose that different parts of England were occupied by two races (although in fact it contains more than that number), and that one of these is characterised by being tall and having round heads, while the other race is short in stature with markedly oval or oblong heads, which for convenience we may term long heads on

account of the long narrow appearance they present. Metric statistics of each race sorted out separately would show more or less uniformity of character, but at the same time a degree of variation ranging above and below a certain centre which would be different for each of the races. On amalgamating these statistics there would be found to be a considerably greater range of variation in the actual measurements of stature and of head length and breadth than obtained in any one of the races taken separately, and indications of a mixed population would present themselves. Another form of mixture would be obtained if for centuries these two once more or less pure races had intermarried. Their descendants would show that in some cases the characteristics of each of the ancient races were maintained, in others that short stature was associated with a long head and short stature with a round head; an intermediate form of head, a mean between the round and the long, and middle-sized stature would also occur. In the same family even there might be found one member short, medium or tall with a head intermediate in form between the round and the long, another member tall with a long head, while a third was short and round-headed. This is precisely what has occurred in England, and we have at the present day all the combinations mentioned. In some parts of the country the long-headed short race are predominant, in other parts the tall round-headed race are more numerous, and in every part of the country there are modifications of the two races assuming the form of a compromise or of the old race characters of one race appearing in one part of the body, while other parts of the body of the same individual give evidences of characters derived from the other ancestral race. There have been also several subsequent introductions of other mixed ethnic stocks such as Saxon, Norse, Normans, French, Italians, Jews, Russians, and Teutons from various parts of the Continent. In the division of each measurement used in metric identification, a true balance must be struck between the various race elements in different parts of the country, the modifications caused by the admixture of these races in various proportions, and the frequency with which one or other of the special characteristics of each of the two early races reappear. The problem is a difficult one, and the balance might be upset at any moment and require readjustment by a marked increase of criminals from one or other part of the country, or by an increase of criminals possessing the characteristics special to one or other race, or of the resultant modification produced by admixture of races. The effects of town life and of certain kinds of employment in producing degeneracy are also elements of importance which must not be overlooked as causes liable to affect the balance. The divisions which have been arrived at are as far as possible the resultant of the various factors obtained from statistics received from all parts of the country, including large towns as well as rural districts.

From what has been just stated it will be evident that it was impossible to utilise the labours of other workers in the field of metric identification by adopting their schemes of classification and applying them to our records. For example, it was useless to attempt working with the various limits which have

been found applicable to the metric descriptions of criminals in France, the ethnological composition of the inhabitants of that country being different from that of England in the proportions of the admixtures which have taken place through past ages. Nor do I think it likely that the various limits which have been assigned to the sub-divisions in England would in all respects hold good in the case of a metric bureau being established either in Scotland or Ireland, or even for the north or the south of England itself.

I have already stated that in a mixed population such as we have to deal with in England the correlation between the different measurements used for the classification of criminal records is slight. Still it is present to some extent, and has to be provided for in fixing the limits of the different groups so as to obtain equal distribution of the records in the various divisions and sub-divisions of the cabinet, which is a matter of considerable importance. By correlation between the different measurements I mean the tendency for a person of large size to have the various parts of his body large and conversely for a small man to be of small dimensions throughout his organism. This does not hold good universally, as it is well known that a man of small size may have a large head or he may be small in one of his head measurements and large in another. Inherited racial characteristics in some respects modify this tendency to correlation in a mixed mass of metrical statistics, and so assist in reducing it to the proportions in which it exists.

When we take a sufficiently large number of measurements of any part of the body whether it be of stature, head length or any other dimension, and plot the individual measurements out on paper ruled horizontally and vertically so as to form small squares each one millimetre in diameter, we find that they form an outline diagram in the shape of a curve or polygon more or less peaked to which the name of *Frequency curve* is applied, and which may be dealt with by mathematical theory. The most frequently occurring size will form the highest point or apex of the curve, and from this the outline will more or less rapidly or slowly recede till the maximum degree of divergence on either side of the mean is reached, according as the range of variation in the dimension under examination is small or great.

If the individual elements used in the formation of this frequency curve be homogeneous the curve will appear to be simple and regular in outline, and it would be a matter of no great difficulty to so divide the sum of the elements entering into its formation at each millimetre of its extent into what, for purposes of our classification, would be three equal groups, or at least near enough to be considered equal groups. The fact that the frequency curve is not always homogeneous has been noted by Bertillon and others and mathematical methods of analysing it given by Professor Karl Pearson, where two elements occur in its composition. In a mixed population such as I have shown we have to deal with in England, and in which there are various kinds of mixtures and other influencing factors, the frequency curve of any measurement often shows its composite character by irregularities of outline; especially is this the case when the metrical statistics of

which it is composed are not very numerous. The predominance or the reverse of any one or other of the various ethnical factors previously mentioned at the time the data are being dealt with, and at other times, introduces an element of uncertainty which must be provided for as far as possible, so as to prevent the necessity of having always to be modifying and altering the limits of the various groups. The probable error has therefore to be calculated and irregularities in the curves allowed for. I need not here go into the details of the various mathematical proceedings by which the several factors involved may be dealt with to obtain the desired result. I may, however, remark that an attempt was made, in the first instance, to fix the limits of the divisions directly without applying any of these mathematical processes, beyond that of sorting out the records into three equal groups, and then proceeding to deal with the divisions so arrived at by the next measurements and so on; but it proved a failure, and more scientific though more intricate means had to be resorted to which have given much more satisfactory results. The first of these tried was that of working upon the lines applied by Mr. Francis Galton to his laboratory statistics, which, at various times, he has brought before this Institute for determining the mean between different percentiles, probable errors and the like. I found as regards the first, that it was not quite exact enough for the purposes of these divisions, as by the formula he uses, viz., $\frac{1}{2}(Q_3 - Q_1) + Q_1 = M$ or Q_2 , it is assumed that from the two first mentioned quartiles, the value of any one or both of which may be subject to a plus or minus variation, better data for fixing Q_2 are obtained than from the observed Q_2 . More satisfactory results were obtained by the use of Professor Edgeworth's modification of this formula, whereby the influence of all three quartiles are called into action in determining the mean value of Q_2 . This may be shortly stated by the formula, $\frac{2Q_2 - Q_1 + Q_3}{3 \cdot 2}$, or $\frac{Q_1 + Q_3 - 2Q_2}{3 \cdot 2}$, as the one or other factor is the larger. I am, however, indebted to the various publications of Professor Karl Pearson for much valuable assistance in this work. The practical outcome has been that for the purposes of primary classification, I have now got limits which I think are fairly reliable, determined for the first four measurements on the metric form and card, and those of the fifth measurement—the cubit—provisionally arranged. Progress has also been made towards secondary classification, as I have also got certain subdivisions by some of the finger impressions in process of being worked out; as, however, these latter are still in the experimental stage I do not, as I stated at an earlier period, intend to discuss them on this occasion, but will content myself with mentioning that they are intended to take the place of the secondary measurements, colour of eyes, etc., used by M. Bertillon as a subsidiary means of classification of the French metric records.

The description of the arrangement of the metric records in the metric cabinet just given applies only to those of males who have reached adult size. The metric descriptions of women are separately dealt with. Being comparatively few in number as compared to the records of males, one cabinet with twenty-seven

drawers has been ample for their accommodation. The same plan of sub-division has been adopted for this cabinet as for that of the males, but fewer measurements have been requisitioned for the purpose of primary classification, and different limits fixed for the several classes.

The metric descriptions of growing youths up to twenty years of age are dealt with separately from the records of adults, and for the classification of the former finger impressions only have been employed as recommended by the Committee in their report, it being obvious that earlier records would in many instances be missed if search for them were made from metric descriptions taken a year or even less subsequently, in consequence of the growth during the interval of the parts measured.

The system of recording the metric descriptions of prisoners used in England differs from that of the French system, which has been adopted by the continental nations of Europe, chiefly in particulars of secondary importance. If a metric description be sent to the Central Office here from France, Germany, Austria, or any of the other countries which has adopted the metric system of identification for its criminals, search can be made for the prisoner by it, because all the information required for search by our system is contained on such foreign metric card. If on the other hand the metric description of any person arrested or in prison in England is applied for by a continental nation or we desire to have search made for him in some continental metric bureau, I am able to get the various additional particulars and measurements taken in our prisons which are required by the Identification Bureau so applying or applied to for information to enable search to be made for the prisoner by the Bertillon system.

Hitherto I have dealt with the processes of recording and classifying metric descriptions so as to form a register which will enable us to lay our hands upon any particular record contained therein with the minimum amount of labour and in the shortest possible time. We have now to consider how this metric register is to be used in order to realise the main object for which it has been established, namely, the identification of criminals. In doing so I have first to describe what steps have to be taken by Police Forces throughout the country, desirous of obtaining information as to the criminal history of anyone it may contain, and secondly, what has to be done by the staff of the Metric Office when a request for information regarding any person thought likely to be registered in the Central Office, is received.

When a person is arrested on a charge of having committed an offence and he is unknown to the police by whom he is arrested, it is usual to ask the magistrate before whom he is brought in the first instance to remand him to enable inquiries to be made regarding him, or the magistrate may of his own initiative remand the prisoner for that purpose. If the magistrate grants the application for a remand or himself remands the prisoner, the following blank form, which has been approved of for the purpose by the Home Secretary, is filled up by the police in charge of the case, asking for the metric description of the prisoner to be taken

by the governor of the prison in which he is kept during the time for which he is remanded.

The Chief Constable of _____
hereby makes application that the measurements, description, finger
impressions and photograph of _____

charged at _____
with _____
and remanded till _____

shall be taken and forwarded to the Registrar of Habitual Criminals,
New Scotland Yard, London, for the purpose of obtaining information
as to his antecedents, as in consequence of the nature of the offence
with which ...he is charged, there are grounds for suspecting that ...he
has been previously convicted, or has been engaged in crime.

*

Approved.

_____ J.P.
_____ day of _____ 189

Signed _____
Rank _____

To The Governor,

H.M. Prison ...

N.B.—The Officer of Police signing this application must be of not lower
rank than Superintendent.

* Other reasons, if any, to be here stated.

This form is submitted to the magistrate or to a Justice of the Peace for his approval. If he approves of the metric description of the prisoner being taken, he signs the form, and it is forwarded with the commitment warrant and the prisoner, or subsequently, to the Governor of the prison. In the metropolis the approval of the Commissioner of Police or of an Assistant Commissioner is sufficient, they being *ex officio* Justices of the Peace. With the delivery to the prison officials of the form bearing the magistrate's approval the duty of the police ends, till a reply has been received from the Metric Office. The Governor of the prison has forthwith, on the receipt of the prisoner and the application, to have the metric description and photograph of the prisoner taken and forwarded to the Metric Office for search. This may seem a somewhat long and roundabout procedure, but were the various circumstances which led to its adoption taken into account, I think it would be regarded in a more favourable light than it appears in at first sight. The question may naturally be asked, Why do not the police take the measurements of a prisoner on his arrest? The Governor of a prison is the only one who is authorised by Act of Parliament to measure and photograph a prisoner. To extend the power to the Police Forces we would have had to wait for an Act empowering them to do so, to be passed before the system could have been introduced. Again, supposing such an Act to have been passed, there are

in England and Wales no less than about 200 Police Forces independent of each other, for each of which, at least, two measuring officers would have had to be trained, and in several forces four to six officers would be required, so that the total staff to be trained and looked after would have amounted to from 500 to 600, a number which it would almost be impossible to keep efficient at the work.

On receipt of the application and metric description at the Metric Office the pattern of the finger impressions have to be deciphered and noted on the metric form in the space assigned on it for the finger formula, likewise the measurement formula is made out and noted on it from a key to the cabinet, containing the limits of the different divisions and sub-divisions. By this means the exact drawer, and sub-division of the drawer is arrived at where any previous record of the prisoner should be, if there be a previous record of him. The searcher is thus able to go directly to the exact series of records, and turn over the few cards it contains till he finds the previous description of the prisoner. The time occupied in noting the measurement and finger formulæ, and searching for the previous record in ordinary cases occupies from three to five minutes. If no previous record be found of the prisoner in the set of cards indicated by the measurement and finger formulæ, the searcher has to see whether any of the measurements are close to one or other margin of the tripartite division of any measurement, and if so, repeat the search in the other division or divisions in which it might be before he can say that no previous record of the prisoner exists in the cabinet, because on a previous occasion when the prisoner may have been measured, the measurer may have made the measurement of the part near the margin of the division tighter or slacker, as previously mentioned. The result of the search, whether it be positive or negative, is then forthwith communicated to the police force applying for the information regarding the prisoner, and if a previous record be found, the list of previous convictions recorded against him are forwarded with the answer. Unless the measurements be bad, which they seldom are to the extent of making the search ineffectual, it so rarely happens for a prisoner to be missed on careful search being made, that it may be accepted when a previous record of him is not found, that he has not been liberated from prison on the expiration of a sentence of imprisonment for serious crime during the time the metric system of identification has been in force, which of itself is strong evidence in favour of his not being an habitual criminal.

The number of searches which have to be made before a prisoner is found is important in determining the usefulness of the system, the weak point of which, as I have previously mentioned, is the occurrence of marginal measurements requiring searches to be made in more than one division of the cabinet. Naturally, when a previous record is not found where the metric form indicates it should be, the searcher, desirous of making sure that there is really no previous record of the prisoner in the cabinet and so prevent his being "scored off," on it being subsequently discovered that such a record did exist and had been missed by him, is led to allow freely for possible errors of measurement,

It is therefore desirable to ascertain how far such multiple searches may be pushed with advantage and with what prospect of success.

The following table compiled from the number of searches made in cases where previous records were found and the prisoners identified as old offenders may be useful, though the percentages therein given are only put forward tentatively in consequence of being based upon too few data to be entirely reliable, but may be considered as it were the "first fruits" of the metric system in England.

Identifications made on—					
1 search	...	...	...	61.0	per cent.
2 searches	...	...	...	17.1	" "
3	"	...	...	11.0	" "
4	"	...	...	2.7	" "
5	"	...	...	3.6	" "
6	"	and upwards	...	4.6	" "

From the above table it will be seen that to find the previous records of about 90 per cent. of the prisoners already registered, not more than three searches were required, and of that percentage two-thirds were found on the first search; after the fifth search the number found rapidly decreases. No doubt by making so many searches the bad effects of errors in measurement have been counteracted, but as time goes on and the measuring staff becomes more expert at the work I hope better results may be looked for.

The first two-and-a-half years after the metric system was introduced were occupied in training a staff of measurers for the various prisons, and in recording metric descriptions of prisoners before their discharge from prison. It was not until about 6,000 descriptions had been classified in the metric cabinet that the actual work of making identifications by means of the system was begun and then but gradually. I have therefore only the results of three years to show and compare with those obtained under the old system. Starting with only a small proportion of records as compared to the number of criminals, and of criminal records on which the Metropolitan Police had to draw for their identifications, and there being still not more than 18,000 metric descriptions classified in the cabinets, it will be obvious that the best numerical results obtainable by the metric system have not nearly been reached yet. The percentage of identifications by this system has, however, shown a steady increase from the beginning, and I feel sure that as the descriptions of the criminal population are obtained and classified, this increase will continue in the number of identifications effected by means of it. The results obtained during the last three years from the beginning of June, 1897, to the end of May, 1900, show that of the total number of applications received at the Metric Office requesting information as to the antecedents of prisoners and accompanied by metric descriptions, exactly 30 per cent. were identified as former offenders. In many cases I have reason to know that the metric system was only resorted to after other means of discovering the

identity of these persons (numbering in all over 2,000) had failed. The mere number of identifications made by the metric system is but a single factor in estimating its value, and the large amount of time that has been saved to the Police Forces who have used it is equally important. The officers who would have been detailed to make investigations under the old system have been employed at other work, and the identifications have been made with a certainty and accuracy which under the old system were wanting, and most probably in many instances where no connection with previous convictions would have been traced.

Turning to the Report of the Committee for 1894 once more, I find a valuable table of statistics of the search forms received and the identifications made from the records at the Headquarters of the Metropolitan Police during the years 1891, 1892 and 1893, under the old system of identification. By adding together the searches received from the various Divisions of that Police Force and the route-inquiry forms received by it from Provincial Police Forces during these years, we have a total number of 23,110 searches; adding the identifications made from records during the same years, we find they amount to 3,922, which gives a percentage of almost 17·0 identifications from the previously mentioned number of searches.

Comparing the results of the searches made by the metric system with the above made under the old system together, we have the following result:—

Identifications by metric system ...	...	...	...	30·0 per cent.
„ from records by the old system ...	...	...	...	17·0 „ „
Increase of identifications by metric system ...				13·0 „ „

As regards the time taken in searching by the old system, I find a significant note under the table referred to which is as follows:—“On the 1st day of March, 1893, 21 officers attended to search for 27 prisoners, taking in all 57½ hours to search; resulting in 7 identifications.” Giving a liberal allowance of time for searching by the metric system the same work could be done by one officer in four hours.

The benefit to be derived from the use of the metric system to Police Forces in aiding them in their work of identifying criminals has not yet been fully realised except by a few Forces. As it becomes better known I have no doubt it will become much more extensively employed than hitherto, and the reliability which can be placed on the identifications made by means of it will be appreciated not only by the Police Forces of the country, but also by those who have to administer the law, in the persons of magistrates and the judges of the higher courts. The state of organisation of the system is such as to enable any increased demands which may be made upon it to be met with ease. Sufficient proof of its utility has already been forthcoming to show that it has passed successfully through the experimental stage, and that it is capable of fulfilling all that may be required of it in future, provided that it is carried on with due regard to the scientific bases on which it depends for its

existence. But it is necessary to emphasise this proviso. The metric system of identification is not like a machine such as a steam engine or a watch which will work satisfactorily on being supplied with the motive force it requires under the hands of those not skilled in its construction. In other words it cannot be carried on successfully as an ordinary branch of a government or police office. To be successful it must ever be considered and treated as a scientific laboratory to be carried on under the immediate supervision and personal direction of a scientific expert at the work, one who has a good knowledge of human morphology and also of mathematics as applied to statistics, and medical jurisprudence. There is no finality in the arrangements of any part of the system; modifications and improvements must ever take place if it is to progress and keep up with the calls upon it. I have heard the complaint made that M. Bertillon was ever making changes and alterations in the arrangements of the Paris Anthropometrical Bureau. This instead of being a ground of complaint is a sign that the system there is being maintained in an efficient condition. In this country the need of expert direction is still more necessary than in Paris, seeing that here none of the work of measuring prisoners is done at the Central Office whereas in Paris a great part of it is done under M. Bertillon's own eye. Here the work of the measuring staff at the Prisons and of the searching staff at the Central Office though entirely separate has to be kept in harmonious touch the one with the other. The disregard of scientific direction has proved disastrous to the success of the metric system of identification in some countries where it has been started and carried on for a time by police officers who have had only a little instruction in it, and cannot be expected to be proficient in the sciences on which it is based. I have been constrained to dwell upon these points because of the apparent simplicity and ease with which the practical results of the system seem to be obtained to those who are not versed in the underlying principles and work upon which the practical results depend, and which if not attended to must inevitably cause it to break down. I have no hesitation in stating that unless adequate provision is made for carrying it on in the way which is essential to its very existence, it is far better not to attempt identification by this system. Inquirers have sometimes said to me, "We do not want the scientific part of the system, only show us how it is to be worked in practice." My reply is, "You may as well try to play *Hamlet* without anyone to take the part of Prince of Denmark, as to attempt to do without the scientific part of the system." But I do not wish it to be inferred from anything I have just said that there are inherent difficulties in administering this system. All I mean to state is that adequate knowledge of and training in the sciences on which it is founded are essential to carry out the system satisfactorily. No one would think of entrusting the medical or surgical treatment of the patients in a hospital to the civil governor and his clerks, however capable he might be in his own sphere. By a person possessing the necessary knowledge the metric system of identification can be as easily directed, and the various contingencies which occur provided for, as the work

of a physiological laboratory can be directed by a physiologist, or as a chemist can direct his laboratory. The metric laboratory has the advantage that it only requires the head of it to possess scientific knowledge, the actual work of it can be well carried out by prison and police officers, after a certain amount of training, under his direction.

If in the future the metric system be conducted in this country on the lines I have indicated, which are those on which it was started, I have no hesitation in predicting that its progress in the future will be thoroughly satisfactory, and that it will realise the utmost expectations of the Committee which recommended its adoption.

DISCUSSION.

Mr. D. MACIVER said:—Dr. Garson, in his capacity as scientific expert at Scotland Yard, is trying by means of anthropometry to discover the differences which characterise individuals, but when he writes the instructions in *Notes and Queries on Anthropology* he is describing measurements which aim at eliminating individual variations and obtaining the characteristics of race. Obviously, therefore, it might be expected that different points of measurement would be selected for the attainment of diametrically different ends. But to our surprise we find that it is precisely the measurements employed by the ethnologist, *e.g.*, head-length, head-breadth, face-breadth, which figure in the forefront of Dr. Garson's list of prison measurements. There is therefore a dilemma. The measurements referred to must either show racial characteristics and be of use to the ethnologist, or they must show individual peculiarities and therefore be of value to the prison expert. They certainly cannot do both at once.

Colonel GARSIA said:—The system of identification explained by Dr. Garson has recommended itself to me by reason of its being based on something approaching to certainty, for in my long experience in connection with criminals I have realised the uncertainty of the former system, which was based entirely on recollection by a prison officer or policeman of the features of a criminal. How unreliable was that system of identification may be gathered when I mention how on one occasion I complimented an old and trusted prison officer on his memory, which enabled him, as sessions officer, to identify as old criminals persons he had not seen for a great number of years, to which he replied, "Sir, I swear to what the police tells me; they knows best." I was completely converted to the system of identification by measurements when, as Dr. Garson has mentioned, the release of an innocent person, shortly after the system was introduced in England, was brought about by it. That was the case of a prisoner in Reading Prison who had been tried and convicted of a fraud said to have been committed by him some months before his arrest. The accused had been duly identified as the thief and an old criminal. He petitioned, after being sentenced, declaring that he was not the thief, and that it was mistaken identity, as he was in prison in France when the fraud was committed. The measurements and other particulars of the person he represented himself to be were then applied for and obtained from Monsieur Bertillon in Paris, and they proved to be identical in every particular with the prisoner's measurements taken at Reading, and the truth of the prisoner's statement being so fully

established, he was released. Not being a scientist, I do not attempt to criticise the science of the system of measurement and finger-prints so ably explained by Dr. Garson. I can only say, I so thoroughly believe in the system that I have recommended the Secretary of State for War to adopt it for preventing fraudulent enlistment in the army, and for checking desertion. I have recommended that every person discharged from the army for any cause, except on termination of engagement, and every returned deserter, shall be so measured, and a register similar to the criminal register be kept, and on a doubtful person offering to enlist he shall be measured and his measurement be checked before he is attested. I believe such a system would be a much more effective way of stopping desertion and fraudulent enlistment than imprisonment. The system is still, I think, in its infancy; but it seems to me far better than that in use in France and other countries, seeing that it is a combination of the methods of Monsieur Bertillon and Mr. Francis Galton, and I feel that we are much indebted to Dr. Garson for the instructive and interesting address he has given us.

Major E. G. CLAYTON said he could only endorse all that Colonel Garsia had said concerning the advantages the present system of identification possesses over the old system; these advantages he considered to be undeniable.

Mr. GALTON said he had not experienced the difficulty that Dr. Garson mentioned in the consistent classification of intermediate forms of finger-print patterns. There were not many of them, and a small standard collection sufficed for reference. The essential point was that the doubtful cases should be decided at first with scrupulous care, and in strict accordance with the standards; then, after a short time, a right decision would be rapidly formed. Neither could he think that much difficulty need arise from a refractory prisoner. It did not seem to require great ingenuity to contrive an arrangement which might be a sort of gauntlet with finger-stalls, and which, without brutal treatment, should prevent the flexure of the hand and yet leave the bulbs of the fingers exposed. The method of measurement was unfortunately impracticable in some of the countries where identification was often called for. In India it had been tried and then entirely suppressed, because it was found impossible to exercise that constant supervision over widely distant stations which was needed to ensure the measurers doing their work accurately. Between 150,000 and 200,000 cards referring to as many criminals had been quite recently done away with, and cards of finger-prints are being substituted for them as fast as possible. He regretted that Mr. Henry, under whose administration this great change had been effected, was not present at the meeting to relate his experiences, which were entirely favourable to the finger-print method. On the other hand, he (Mr. Galton) felt surprised that the power of that method was as great as Mr. Henry found it to be. There was one very common pattern, that in which every finger showed an ulnar loop, 6 out of every 100 sets being of this kind. Consequently in a collection of 200,000 sets there would be no less than 12,000 of these, yet Mr. Henry seemed to use no method for sub-classifying them that differed in principle from those he (Mr. Galton) had employed. He wished to refer briefly to a visit recently made by himself to the Bureau of Identification at Cairo, organised within the last three years by Colonel Harvey Pasha. It was carried on in strict accordance with the recommendations of the Committee of which Dr. Garson had spoken, and it seemed to him as well

managed as could be. The difficulty arising from all measurements in the same individual tending to be alike large, if one of them was, or conversely, all small if one was small, had been ingeniously overcome by one of the officials entirely by himself, the number of cards, or rather papers, in each of the drawers being now nearly the same. The rapidity was surprising with which cards were hunted out from the collection in Cairo of between 18,000 and 19,000 of them, referring to as many different male adults. The women were dealt with by finger-prints alone, there being social prejudices in the past that interfere with their measurement. Similarly as regards minors, for it is obviously of no use to measure a growing boy.

He thought that every separate Identification Bureau would be likely to have something to teach to the rest, and much to learn from them, and he looked forward to a time, perhaps some few years hence, when a conference of executive officers might properly meet to interchange views and arrange as far as might be for a similarity of method.

Sir JAMES CRICHTON-BROWNE said he had listened to Dr. Garson's paper with great interest, and with high appreciation of the ingenuity and labour that had been expended on the investigation it described. The system of identification which Dr. Garson had inaugurated in this country would have important practical results. Certainty of detection was much more deterrent in the case of crime than severity of punishment, and it was possible that some of the criminals subjected to this mysterious process would, on their discharge from prison, go and sin no more, convinced that an alias would no longer afford any protection. Then, the data collected, when classified and arranged, would throw light on some racial, social, and pathological questions, and would be of special value, when comparison was possible between them and similar data, referring to other classes in the community besides criminals. Sir James desired strongly to insist on the importance of what Dr. Garson had said, that observations of this kind could only be efficiently carried out under the immediate supervision of a scientific expert. No matter how well trained, or how painstaking the prison officers might be, they would require to be supervised and checked, from time to time, in making measurements in which the utmost exactitude was essential. He recalled some observations on weight, made on the patients of a large lunatic hospital of which he had charge twenty-five years ago. There were 1,500 patients, and they were weighed monthly with a view to the early detection of pulmonary consumption, the symptoms of which are often masked in the insane, so that it may advance far without detection. All patients who had lost more than three pounds in the month were reported to the medical officers for special physical examination. The weighing was carried out, not by ordinary nurses and attendants, but by special officers. Well, on one occasion the medical officers tested the monthly records, going over all the weighing themselves, and they found about 75 per cent. of error, the human bias vitiating such investigations being revealed in the fact that there was a general exaggeration of weight. When patients were reputed to have lost weight there were special inquiries, and a good deal of trouble was imposed on all concerned. Sir James inquired whether the *conformateur* had ever been employed for the identification of criminals.

In reply Dr. GARSON said that the dilemma in which Mr. MacIver found

himself was the result of a deduction he had made for himself from incorrect premises. There existed no such incompatibility as Mr. MacIver had stated, in the use of the measurements of the head mentioned, for showing racial as well as individual characteristics. In all races of people these measurements have a considerable range of variation, and in mixed races they are but slightly correlated; for these reasons they are admirably adapted to demonstrate the individuality of persons measured and likewise for purposes of classification, the special desiderata in criminal anthropology. They are equally well adapted for indicating race characters, because in different races they vary proportionately to one another very considerably, but in persons of the same race, if the race be what we term pure, their proportionate variation is small or has a nearly similar ratio. The absolute head-lengths of two persons may differ considerably, and yet the heads may have identically the same morphological formation if the breadth of the longer one be sufficiently great to make both proportionately alike—in other words, if the measurements of length and breadth in each give the same cephalic index, or place them together in any scheme by which the relative proportions of the two measurements are shown. In criminal work the direct linear dimensions of parts are used, while for distinguishing race characters it is relative proportion which is sought for and used, the actual size of the head being usually expressed by cubic dimension or by some empirical formula worked out from the linear dimensions. From the same set of measurements, therefore, the two kinds of information required for totally different purposes may be equally well ascertained. The real determining cause of the selection of the same measurements for both purposes, apart from their intrinsic suitability for each, is no doubt due to the fact that, of all measurements which may be taken of the head, these are the ones which can be obtained with the greatest degree of accuracy, a matter of vital importance in criminal identification, and no less important in ascertaining race characters.

The opinion Colonel Garsia has expressed regarding the new system of identification is indeed high testimony in its favour, as no one is better able than he is, from practical experience of both it and the old system, to form a comparative estimate of their relative efficiency. When the new system was introduced Colonel Garsia was Secretary to the Prison Commissioners, and it is due in great measure to him that the portion of it which is done in the prisons was begun and carried on by the prison officials with the greatest good-will and zeal. The introduction of something new, entailing additional work without corresponding pecuniary advantages, is in any organised service usually beset with many difficulties. In this case nothing of the kind was experienced, and he could not speak in too high terms of the loyal support and co-operation he had had throughout in the work from one and all of the prison officials. He was also greatly indebted to Colonel Garsia, and to his successor, Major Clayton, for the assistance they had at all times given him in connection with his duties.

In reply to Mr. Galton, he desired it to be clearly understood that his own remarks on classification by finger-prints apply to their use for this purpose on a large scale without the aid of measurements; as is being attempted in India. He himself used a sub-classification by means of them, in conjunction with measurements, and was contemplating still further developments in this direction, but was not going to say more on the subject that night, as he hoped to make it the

subject of a subsequent paper. The formula of the finger impressions has been for the last two years the means by which individual cards are picked out, after the drawer or division of the drawer, wherein the card sought for should be, has been determined by the measurements. It was very interesting to have from Mr. Galton an account of his personal visit to the Identification Laboratory at Cairo, and of the very excellent work which the speaker knew was being done in Egypt by his friend Colonel Harvey.

M. Bertillon claims that in Paris the use of his system has been a deterrent to crime such as Sir James Crichton-Browne has anticipated: certainly it has been followed by a diminution in the use of *aliases*. Before anything can be said as to the deterrent effect of the system in this country it will require to be more extensively used than at present. The *conformateur* has not been used in the identification of criminals, and whether there is any scope for its use in this field is extremely doubtful, it being only in part an instrument of precision. The same difficulty as occurs in classifying photographs would hold good with respect to the classification of the outlines of the head obtained by means of it.

The PRESIDENT complimented Dr. Garson on his lucid explanation of a difficult and complicated subject; and while he agreed with him that the system was effective in its working, he regretted at the same time the absence of Mr. Henry, who, after trying the Bertillon system in India, had abandoned it for finger-prints alone. Committees had sat in India and in London on the comparative merits of the two methods of identification of criminals, and had come to opposite conclusions; so that in India the finger-prints were considered sufficient, while the English committee rejected the finger-prints except as an accessory, and adopted the more complicated metric system. On these grounds he thought there was still room for further argument.

MYCENÆAN CYPRUS AS ILLUSTRATED IN THE BRITISH MUSEUM EXCAVATIONS.

BY ARTHUR J. EVANS.

THANKS to the excavations made in Cyprus on behalf of the British Museum by means of the Turner Bequest, it has been for the first time possible to obtain a clear insight into a distinct and highly important phase of the insular civilisation. Hitherto, though abundant materials existed relating to the Earlier Bronze and Copper Age of Cyprus and again to the form of Early Iron Age culture to which the name of Greco-Phœnician has been given, the evidences of Mycenæan influence were but sparsely attested. In Mr. J. L. Myres's comprehensive introduction to the early Cypriote remains in the recently published Catalogue of the Cyprus Museum, it was only possible to deal with this section of the subject in the most general terms. But with the results before us of the fruitful excavations conducted by Dr. Murray and his colleagues at Amathus, Curium, and Old Salamis, the Mycenæan factor in the unwritten history of Cyprus assumes a wholly new importance. The impress of this Ægean element is so strong that we find ourselves in presence not of sporadic influences or isolated importations of objects, but of a distinct period in the insular civilisation to which the name Cypro-Mycenæan must henceforward be given.

Dr. Murray and his colleagues must certainly be congratulated on the wealth of illustration with which these results are set forth in their recent publication,¹ including fourteen photographic process plates and a number of figures in the text. Many of these figures, it may be added, have a special value from the fact that they represent, in a collective form, groups of vases found together in the same tomb.

The finds at Enkomi or Old Salamis were extraordinarily rich in gold objects belonging to the Mycenæan Age. Indeed, since Schliemann's excavation of the Akropolis graves at Mycenæ, there has been, if we except the Ægina Treasure, no such a discovery of gold objects belonging to the prehistoric period of Greece. Both these, the carved ivories, and the vases in a naturalistic indigenous style imitating Egyptian porcelain, combine to throw a wholly new light on the art of this interesting period.

Considering the generally conservative character of Cypriote art, it might be tempting to believe that we have here the record of a survival of the Mycenæan

¹ *Excavations in Cyprus (Bequest of Miss E. T. Turner to the British Museum)*. By A. S. Murray, LL.D., F.S.A., Keeper of Greek and Roman Antiquities, A. H. Smith, M.A., F.S.A., and H. B. Walters, M.A., F.S.A., Assistants in the Department of Greek and Roman Antiquities.

style belonging to a considerably later date than the Mycenæan remains of Greece proper. Groups on some of the ivories, such as the man fighting with a griffin, show a certain community with the designs on later Cypro-Phœnician silver bowls and on scarabs and ivories found by Layard in the Palace of Nimroud and dating from about 850 to 700 B.C. Dr. Murray himself has consistently stood out for a chronology which brings the pure Mycenæan style down to the "Age of the Tyrants" and makes it "the immediate predecessor of the Ionian Greek art of the seventh century B.C." In the present publication he has endeavoured to draw new arguments in support of his thesis from such approximations as the above between Cypro-Mycenæan and later works. The present work, set forth under official auspices, is so full of suggested chronological deductions and—if its authors will pardon the expression—archæological insinuations, all pointing in the same direction, that it is time to inquire whether there is any real warrant for these highly revolutionary conclusions.

Nothing is clearer than that "Ionian" art in many respects represents the continuity of Mycenæan tradition. But it is also none the less evident that its designs do not as a whole fit on directly to those of the great days of Mycenæ. There are missing links in the chain which must be supplied from some intermediate quarter. A whole series of new winged creations—Harpies, Gorgons, Pegasi—have come into being. New ornamental motives, such as the Assyrian rope pattern or guilloche, have obtained a vogue. Here and there types remain practically unchanged. Here and there has been an actual revival—especially conspicuous in the Melian class of gems and in some of the oldest coin types—of designs belonging to the great Mycenæan Age, but in this case executed with inferior skill on softer materials. There is a real renaissance, and there is also an unbroken tradition. But wherever in Greece proper this survival of Mycenæan forms is most clearly traceable—as, for instance, in Crete—it is found in combination with entirely new elements, due in Greece itself to the invasion of the old Mycenæan area by "geometrical" forms. In Cyprus itself the same mixed style is visible, due largely to the borrowing of Egyptian and Assyrian elements under the influence of the eclectic Phœnician taste. It is this hybrid culture, and not the pure Mycenæan type, that stands immediately behind the so-called "Ionian" civilisation of the seventh century B.C.

But if we examine the relics of Mycenæan Salamis as revealed to us by these excavations what do we find? Cyprus is Cyprus, and the geographical affinities of the island naturally make themselves felt. There are certainly here more traces of Mesopotamian and Egyptian influence than would be found in the contemporary deposits of the Ægean lands. But the vitality of the local genius is still sufficient to assimilate into its own being the borrowed elements. The prevailing type of seal, for instance, is the Oriental cylinder, and among the most frequent of the engraver's designs is a native adaptation of the Egyptian floral pillar as seen on the porcelain ornaments and beads of Tell-el-Amarna. But the whole together forms a new sphragistic style of a specifically Cypro-

Mycenæan class—a class about which much might be written, but the very existence of which has been passed unnoticed by the authors of the work before us. The ivory groups of the man struggling with the griffin, though they represent the taking over of a familiar Chaldaean scheme, reproduce it nevertheless in an indigenous garb. For the groups on the casket and mirror handles are homogeneous in their character. There is here no impertinent juxtaposition of undigested elements borrowed from various foreign sources, as when we see upon a Cypro-Phœnician bowl a winged Assyrian figure beside a hawk-headed Egyptian divinity.

For my own part I was quite prepared, nevertheless, to believe that the relics from these Cypriote tombs would enable archaeologists to trace a living Mycenæan style in the island to a distinctly later date than that which is now generally taken as the latest approximate limit of the period. It seemed on the face of it extremely probable that a part of these remains might come down after 1100 B.C. I was, indeed, the more inclined to accept such a conclusion, from the fact that in the case of the Ægina Treasure, the jewellery of which presents certain points of affinity to some of the Enkomi specimens, I had committed myself to the suggestion that the date when these Late Mycenæan objects were deposited might come down as low as 800 B.C.¹

But a careful examination of the new Cypriote finds has convinced me that there is no sufficient evidence for assigning to any of the Mycenæan relics found a later chronology than that which lies within the limits generally claimed for that civilisation. The affinities traceable among them to the Treasure from Ægina must, moreover, be rather taken as showing that the Late Mycenæan phase there represented belongs to a distinctly earlier date than I had myself been formerly led to assign to it. No doubt there are among the objects from the Mycenæan tombs of Old Salamis and the other Cypriote sites at present in question a few objects of later fabric. Some of the tombs, as results from information supplied by the principal *scavatore*, showed evidence of secondary use, and the fact that from May to July the excavations at Enkomi were by the circumstances of the case conducted without the presence of an expert archaeologist² makes it unnecessary to attach any great importance to small individual discrepancies in the character of some of the finds. On the whole, however, this intrusive element is extremely small, and the tomb-groups present a very homogeneous Cypro-Mycenæan character.

So many questionable conclusions have been drawn from these finds by the authors of the present publication that it seems desirable to examine them somewhat in detail, especially in regard to the chronological indications that they afford.

The irruption *en masse* of ceramic and other types of Ægean origin on the

¹ *Journal of Hellenic Studies*, xiii, p. 224.

² Dr. Murray states in the preface to his work that "from May to July the excavations were superintended by Mr. Percy Christian, who made a careful record of the contents and shape of each tomb." But, for the delicate questions connected with secondary interments, the constant presence of a trained archaeologist is necessary.

traditional products of Cyprus itself is of special interest in its probable relation to the early Achæan colonisation of the island of which its later quasi-Arcadian dialect was an abiding record. In this connexion the new materials now before us yield at least one important negative result. The earlier Mycenæan elements, such as we see them in the Akropolis tombs at Mycenæ itself, in Thera, in Crete, and elsewhere are here conspicuous by their absence. It was not therefore till Mycenæan civilisation had attained its mature development that it asserted a dominant position in Cyprus. The earliest period represented in these finds corresponds with that which a variety of discoveries of Egyptian objects with Ægean finds and of Mycenæan objects in Egyptian deposits approximately indicate as the fourteenth and fifteenth centuries B.C. In other words, these earliest Cypro-Mycenæan fabrics belong to the same age as the Vapheio tomb, and the most typical graves of the lower town of Mycenæ and of Ialysos.

The internal evidences of date supplied by these Cypriote finds fully corroborate this general conclusion. Together with the new intrusive class of Ægean wares which predominated in the early tombs of this period at Enkomi, Curium, and elsewhere, there came to light a certain proportion of painted vessels answering to the Bronze Age ware of Cyprus itself. Besides these were found many specimens of types of pottery belonging neither to the Ægean nor to the indigenous Cypriote class. One of these extraneous types is that of the black clay bottles¹ (Fig. 1) with punctuated decoration, a class which occurs as a foreign



FIG. 1.—BLACK PUNCTURED WARE FROM ENKOMI.

ingredient in Egyptian tombs as early as the Twelfth and Thirteenth Dynasties and continues to be found there in the succeeding Eighteenth Dynasty period. Another, probably imported class of pottery found in these Mycenæan tombs consists of flask-like vessels of brown bucchero apparently imitating leathern forms.² These vessels have been found at Lachish and other Palestinian

¹ See p. 6, Figs. 1303, 1304, 1306. This and other figures are here reproduced with the kind permission of the Trustees of the British Museum. This ware is referred to by Mr. J. L. Myres, *Cyprus Museum Catalogue*, pp. 36, 37, as "black ware," and he rightly indicates its early associations.

² This is referred to by Dr. Murray as "moulded ware" (see p. 6 and Fig. 7, and other examples in the tomb-groups given under Figs. 62, 66, and 69). Mr. Myres, *op. cit.*, p. 36, calls it "base-ring ware," but some of the most characteristic flasks have no ring at the base.

sites, a fact which seems to point to that quarter as their place of fabric. What, however, is of special importance in relation to the frequent appearance of these foreign flasks in the Enkomi tombs is the fact that they are almost equally frequent in Egyptian tomb-groups of the Eighteenth Dynasty.¹

The Mycenæan vases found in the Enkomi graves fully bear out this chronological equation. Apart from certain local varieties, such as those with chariots and others with bull-fights (*cf.* Fig 4, No. 1205) these are of the fully developed class answering to the fragments found in the Tell-el-Amarna mounds representing the waste-heaps of the Palace of Akhenaten (B.C. 1383–1365) as well as in closed tombs of the same Eighteenth Dynasty period. The pomegranate-like glass vessels (Fig. 4, No. 1218) found with them resemble, as Dr. Murray himself admits, examples found by Professor Petrie at Gurob in deposits ranging from about 1450 to 1200 B.C.

In the same Egyptian deposits occurred a form of bronze pin with a central eye which closely corresponds with a typical form of gold pin found in the Enkomi graves (Fig. 2). The type itself is of old Cypriote derivation, and early varieties of it have been found in præ-Mycenæan interments of the island, such as those of Aya Paraskevê. It seems, moreover, to stand in an intimate relation to certain perforated pins found in the Italian Terremare and contemporary tombs and Lake-Dwellings, which may in turn be connected with the earliest fibula-types of the Scandinavian Bronze Age. But Dr. Murray, neglecting the obvious comparisons supplied from these sources, and especially the Gurob finds, seizes on the fact that some of the Enkomi pins are surmounted by ribbed beads of blue paste as an argument for bringing down their date some seven centuries later than

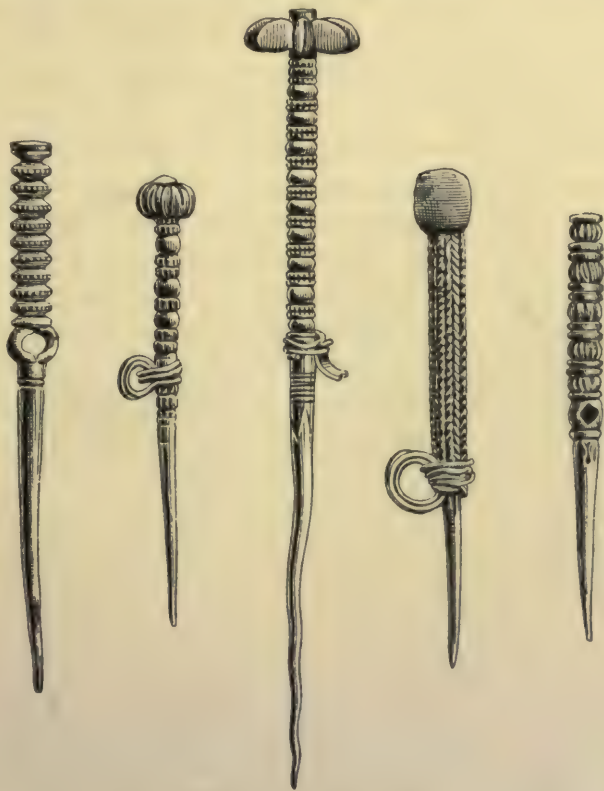


FIG. 2.—GOLD PINS FROM ENKOMI.

¹ Several groups of this kind, from the excavations of Professor Petrie and others, are in the Ashmolean Museum at Oxford.

the parallels above cited would naturally imply.¹ As a matter of fact, the use of glass paste imitations of lapis lazuli for beads and inlaying is a thoroughly Mycenæan characteristic, while such a practice among the later Greeks is at any rate extremely rare. But Dr. Murray is so far carried away by this argument that he does not hesitate to compare the Enkomi pins with those that fasten the chitons on the shoulders of the Fates on the François vase, dating from the seventh century B.C. It is sufficient to observe that the pins on the vase are of an essentially different type, with the loop or eye at the head instead of the middle.

Of fibulas or safety-pins proper, only two examples² were found in the Enkomi cemetery (Fig. 3). Both of these represent a very slight

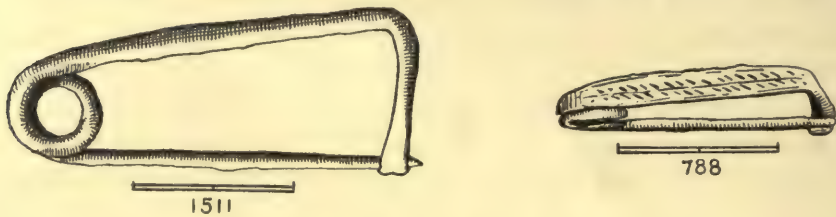


FIG. 3.—BRONZE FIBULÆ FROM ENKOMI.

development of the earliest "fiddle-bow" form. They are of much the same type as some of those found in the tombs of the lower town of Mycenæ, except that what may be called the "stilt" at the catch end is somewhat higher. But they are less developed than two examples from the Curium cemetery (Figs. 92, 93, p. 68), one of them found in a tomb still belonging to the pure Mycenæan period and containing characteristic pottery and implements of bronze. This latter type is represented by two gold fibulæ now in the Ashmolean Museum, found with a bügelkanne of the latest Mycenæan style at Old Paphos, and by another similar from Kition belonging to the Cesnola Collection. This slightly more advanced type, however, itself supplies the antecedent stage to the earliest fibulas of the Geometrical Period. Dr. Murray contents himself with the observation that "it may be remembered that at first one of the arguments in favour of a very early date for the antiquities of Mycenæ was the absence of bronze fibulæ." The argument, which still holds good, was applied to the contents of the Akropolis shaft-graves, which are generally recognised as earlier than the

¹ Dr. Murray quotes, in support of this, a comparison instituted by myself between the cut paste inlaying of the eyes and brows of some embossed heads on a gold ornament of the Ægina Treasure with the inlaid work applied in the same manner to eyes and eyebrows on ivories from the N.W. Palace at Nineveh. But the inlaid work in that case was of lapis lazuli and not of glass paste, as he erroneously quotes me as saying (p. 19). The particular application of the inlaying on the Nimroud ivories to the eyes and eyebrows is a parallel that must still hold. But I based no chronological conclusions on the use of glass paste itself. I was, indeed, careful to point out that sliced lapis lazuli inlayings, analogous to the blue paste of the Mycenæans, are seen in the cloisons of Egyptian jewels from the Seventeenth Dynasty onwards.

² Fig. 27, p. 21.

tombs of the lower city, where fibulae of this primitive type were found. It is quite sufficient for our present purpose that at Enkomi, where the mature stage of Mycenaean art was represented, fibulae occurred of a type certainly not later than the twelfth century B.C.

Amongst the other ornaments found in the Enkomi tombs was a fine gold collar or pectoral inlaid with glass paste. Of this collar Professor Petrie observes that it presents "nine different patterns of gold pendants, and eight of the nine are well-known designs of the time of Amenhotep IV (Akhenaten), but are not found a century later. . . . Even the lotus, which is one of those forms and is so common in Egypt in all ages, has here the very narrow petals which are exactly like the lotus inlay of this reign." He further observes that in the same cemetery was found a metal ring of Amenhotep IV, probably before his change of religion, as the God Ptah is named upon it and many scarabs of this king name the Gods, before his conversion to monotheistic sun-worship. The occurrence of this ring is specially important, since for obvious reasons the heretic Amenhotep IV was not a Pharaoh whose cartouches were imitated at later periods.

Tomb 93, in which the gold collar occurred, supplied another valuable indication of date in the shape of a porcelain scarab with the name of Queen Tyi, the consort of Amenhotep III and mother of Akhenaten. The great importance of this find is that it fits on to a series of four earlier discoveries of scarabs and glazed ware, with the name of Amenhotep III or his queen, in tombs and buildings at Mycenae itself and at Ialysos, demonstrating peculiarly intimate relations with Egypt in the first half of the fourteenth century B.C.

But Tomb 93, the chronological place of which is thus clearly defined by evidence which can hardly be called in question, contains not only the richest and most typical group of gold ornaments found in Enkomi (*see* Plates V, VI, and VII), but Mycenaean pottery of a characteristic indigenous style, including vases exhibiting spotted bulls and a fragment representing pugilists on either side of the rayed pillar tree frequent on the contemporary cylinders of the island. In this tomb, the early character of which is so clearly defined, there was also found a silver ring "engraved on the bezel with Egyptian hieroglyphics which it is contended"—the quotation is from Dr. Murray—"indicate a date not earlier than the eighth or seventh century B.C." If this "contention" be substantiated, the ring must either belong to a secondary interment, of which there seems to have been no other trace, or have worked in from the outer earth. But the character of too many other "contentions" in the present work makes another alternative equally possible. In other words it is difficult to withhold a suspicion that the ring itself may also prove to be of Eighteenth Dynasty date.

Among the silver vases found in the Enkomi cemetery, one is of great interest as representing the type of the famous gold cups of the Vapheio tomb. These cups, as their marvellous *repoussé* designs sufficiently declare, belong to the most perfect period of Mycenaean art. An approximate chronology has been already supplied by the delineation of the same form on a Theban tomb-painting

of Queen Hatasu's time (1516–1481 B.C.),¹ and more recently by its occurrence on an inscribed clay tablet, referring to the royal treasures, from the Palace at Knossos. Remains of this Palace do not include the latest style of art represented at Mycenæ itself, that namely belonging to what may be called the "Round-Shield Period," illustrated by the painted Stela from the Lower City and the "Warrior Vase." It therefore appears probable that the vases of this Vapheio class were in vogue during a period extending from about 1500 to 1300 B.C. There is no trace of any later survival or development of this special form. But, since the Enkomi example was found in a tomb (No. 92) together with Mycenæan pottery and gold pins of the class described above, according to Dr. Murray's system it belongs approximately to the date of the François vase!

In Tomb 28, at Curium, was found a sard scarab in company with a Mycenæan "kylix" with the typical cuttlefish design, a funnel-shaped vase adorned with the equally typical murex shells, and a flat spouted bowl, also belonging to a common Mycenæan type. That the tomb-group as a whole belongs to a good Mycenæan period is obvious. That the scarab forms an integral part of it is extremely probable. With regard to the scarab I must again quote Professor Petrie,² whose authority on this class of Egyptian objects is widely recognised. "The scarab," he observes, "is very closely similar to one of Ramessu II in outline, form of the back, and mode of cutting, and such fabric is not known in later times. It bears a figure of the god Thoth seated, with the sun and moon on his head, perhaps referring to his connection with the god Khonsu. This type of Thoth, either as an ibis-headed man or as a baboon, is one of the commonest designs on scarabs of Ramessu II. I know of some sixteen with this god, two of which have the winged disk over his head as on the Curium scarab. If I have paused thus to show how in style and subject this scarab is identified with the works of Ramessu II, it is because this has been by some curious chance attributed to a far later age and has been set forth as dating a period" (Mr. Petrie is referring to a preliminary notice in the *Times*, 6th January, 1896). "How such a mistake arose it is hard to say. In the Enkomi cemetery another scarab of Ramessu II was also found."

It is difficult to believe that anyone who has, like myself, had an opportunity of comparing one of the Ramesside scarabs referred to by Professor Petrie with the Curium specimen can doubt the justice of his conclusion. But Mr. Walters, with Professor Petrie's observations at his disposal, contents himself with the following bald pronouncement, the authority for which he does not give:—"In date this scarab appears to be not earlier than the twenty-sixth dynasty (B.C. 666–527). There is no evidence that it belongs to a later burial, and it is a remarkable and important piece of evidence for the late date of the Mycenæan civilisation in Cyprus if a seventh century scarab can be contemporaneous with pottery of the Ialysos type" (p. 65).

¹ The tomb of Sen Mut. A more complete representation of this painting than has yet been published will appear in the forthcoming work of Mr. Percy Newberry.

² *Transactions of the Royal Society of Literature*. Vol. xix, p. 73.

Let us put this argument in another form. A coin is found in a Roman tomb which, from the fact that a half-effaced Britannia appears on its reverse, is described as an early penny and referred perhaps to Charles II's time. A first authority on Roman coins, however, points out that it is a not uncommon coin of Hadrian presenting the same figure, and that in fact it belongs to the same date as the other objects from the same tomb. On the face of it there is little doubt on which side the probability lies. But admitting the unlikely supposition that, when thoroughly cleaned, the coin after all turns out to be of Charles II's time, to what natural conclusion would such an identification point? The obvious and indeed only possible explanation is that, as has often happened in such cases, the penny had found its way into the deposit at a later date. Even a "local antiquary" would hardly see in it "a remarkable and important piece of evidence" for the late date of Roman civilisation in Britain.

In the next paragraph there is noted the occurrence in Tomb 43 of what is described as a "Phœnician cylinder of black basalt on which is incised a sphinx or gryphon guarding a sacred tree much conventionalised," and this is cited as another indication of the late date of Mycenæan civilisation. Its probable date is fixed as about 600 B.C., and this view is supported by the altogether unintelligible argument that before this period "such objects could hardly have been imported." Strange as is this conclusion and the consequences derived from it, it has not been thought necessary in the work before us to give any representation of the cylinder, which was found with Mycenæan jewellery of an early class and itself presents one of the most usual of the Cypro-Mycenæan cylinder-types.

It will be seen that the new material supplied by these Cypriote graves, so far from implying a late survival of Mycenæan culture in the island, takes us back at every point to a period contemporary with that of the mature art of the class as seen in the *Ægean* area. The new elements that we find here—and they are some of them very remarkable—are due to local conditions and to a nearer contact with Syrian and Egyptian civilisation. The intimate relations with Egypt are attested by the comparative abundance of imported Egyptian porcelain or of imitative native glazed wares. Among these indigenous works is a rhyton in the shape of a horse's head in a strikingly naturalistic style (Fig. 4, No. 1217). Another takes the form of a ram's head, while two other vases are in the shape of women's heads, in one case back to back (Fig. 4, Nos. 1210, 1211). These porcelain rhytons, and still more the last-mentioned vases with female heads, one of which has the hair behind drawn up in a net, present the most remarkable resemblance, as Dr. Murray justly points out, to some Greek painted vases of the sixth century B.C. It must, however, be borne in mind that glazed ware such as we see in these Cypriote vessels is quite foreign to later Greek art, and that rhytons in the shape of animals' heads occur on Egyptian wall-paintings of Eighteenth and Nineteenth Dynasty date among the tributary gifts of the Kefts and other foreigners. Among the Syrian vessels taken by Sety are certain rhyton-like vases terminating in sphinxes' heads with the hair turned up as if

That the later Attic form shows an extraordinary conformity with these Mycenæan cups is undeniable. But a possible explanation is supplied by parallel phenomena in other branches of art. Many of the earliest coin-types of Greece are actual revivals of designs taken from the numerous engraved gems of the best Mycenæan period. We have not here to do—as I was myself once inclined to suppose—with a mere survival of Mycenæan types. The free, naturalistic figures of the Mycenæan gems had been long since extinct, and a gap of some six centuries separates them from the earliest Greek dies. It was a rather deliberate revival of ancient models, and the archaic art of Greece in fact anticipated one of the most characteristic features of the Italian Renaissance.

The ivory carvings found at Enkomi claim special attention both from the intrinsic excellence of their workmanship and from the obvious relation in which they stand to the reliefs in various materials found at Nineveh. In these carvings better than elsewhere we trace the development of a Cypro-Mycenæan school of sculpture which was to leave its mark on all later Assyrian art. But this local school is itself associated with works in the same material from Ægean deposits belonging to the same mature Mycenæan period. In the case of a bearded head,

surmounted by a conical helmet adorned with rows of boars' tusks, we recognise indeed, an almost exact parallel to the ivory heads with helmets of an identical character found in the tomb at Spata and in Grave 27 of the lower town of Mycenæ itself associated with lentoid gems and other objects belonging to the finest style of art. This evidence of contemporaneity is further confirmed by the bronze implements and good Mycenæan pottery found with this and other ivory carvings at Enkomi, and shows that they cannot be separated in date from the rest of these very homogeneous finds. In Tomb 16, with the above-mentioned helmet, was found part of a small ivory mirror-handle exhibiting reliefs of a recumbent stag or goat. These mirror-handles are a characteristic local fabric, and it was on one of these, from Tomb 17, that was carved the figure of the man slaying the griffin already referred to as presenting a close parallel to similar subjects on later Cypro-Phœnician bowls (Fig. 5). The griffin

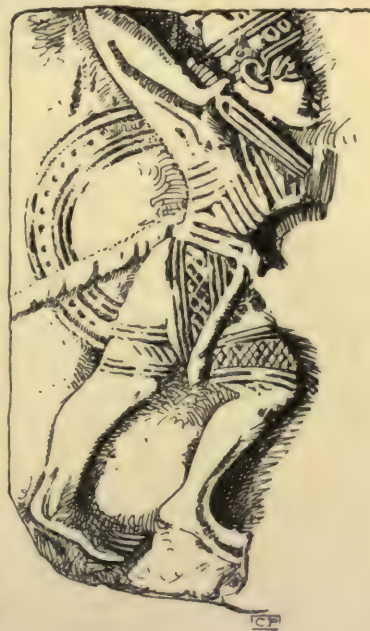


FIG. 5.—WARRIOR ATTACKING GRIF-
FIN: RELIEF ON IVORY DRAUGHT-
BOX, ENKOMI.

on this mirror-handle, with the spiral locks about his neck, answers nevertheless to an usual Mycenæan type, and the warrior wears a conical helmet closely resembling that already described. The lion seizing a bull seen on the back of this, and on another mirror-handle, recalls the design on a series of Mycenæan gems. In short, there is nothing here to separate these ivory carvings as a class

from the objects of the best Mycenæan period, with which they were associated. The work is spirited and naturalistic, and in more than one respect recalls the magnificent reliefs of the Vapheio vases.

Among these ivory objects is one which deserves special attention. This is an oblong box, the lid of which is marked off into squares in a manner identical with that of the draught-box of Queen Hatasu (c. 1481 B.C.). But, if the character of the game is Egyptian, the reliefs on the two long sides of the casket present a curious similarity to Assyrian hunting-scenes. On the best preserved side a mailed warrior armed with a bow is driven in a chariot with richly caparisoned horses at full gallop after a herd of bulls and antelopes (Fig. 6).



FIG. 6.—CHARIOT SCENE ON SIDE OF IVORY DRAUGHT-BOX FROM ENKOMI.

The general resemblance to the Assyrian scenes is evident. Yet when we come to look into details a number of divergent points at once strike the eye. The car of the Assyrian chariot rises at the back; that of the Enkomí draught-box falls away. A distinguishing feature of both the Assyrian and the Mycenæan chariots is the reduplication of the pole by an upper support starting from the top of the front of the car and meeting the pole at the yoke. But here we find a simpler arrangement, in which only the spring of the pole is connected by a cross-piece with the car-front.

In both these characteristic features the chariot of the draught-box follows Egyptian models, as illustrated by Eighteenth and Nineteenth Dynasty monuments, as may be seen from the chariot of Rameses III given in Fig. 7, the only difference being that on some of the Egyptian examples, the back part of the pole is connected with the car-front by thongs in place of a wooden cross-piece. The same monuments show that this Egyptian type of chariot was also common to the contemporary Syrians. On the wall-paintings of the tomb of Rekhmara a Rutennu of North Syria is seen with a chariot of this form, and it reappears driven by Kheta or Hittite warriors in the frescoes of Rameses II representing the great battle of Kadesh (Fig. 8).

The shape of this Hittite car, with its simple rounded outline behind, is

identical with that of the ivory relief. But the correspondence goes beyond this. The most characteristic of the horse-trappings connected with these Hittite war-chariots are a broad collar round the neck and a body-covering which seems to consist of a kind of armour. These features—notably the body-covering—also reappear on the draught-box, where the bowman himself is also seen wearing a



FIG. 7.—CHARIOT OF RAMESES III.



FIG. 8.—HITTITE CHARIOT: BATTLE OF KADESH.

coat of mail. This latter feature is not shared by the warriors of the Kadesh chariot; on a late Hittite monument, however—the relief, namely, of Sakshe-Gözü, which from certain Assyrianising features Puchstein is inclined to bring down

to the close of the eighth century B.C.,¹ and which represents a royal personage in a chariot, hunting lions—both the horse and the riders in the car are accoutred in scale-armour.

This scene has been justly cited by Dr. Murray as a parallel to the Enkomi carving, but though in some respects it shows a survival of the older Hittite fashion, the chariot itself belongs to the Assyrian class. The back of the car rises instead of falling away, and the long upper support is visible above the pole.

On the other hand, a feature of the Enkomi design remains to be described which again takes us back to an earlier period. On one side of the draught-box there appears behind the chariot a figure of a man holding an axe, who wears on his head a plumed casque (see Fig. 6). This casque (as Dr. Murray himself does not fail to observe) is the familiar head-piece of the enemies of Egypt—Purasati, Takkaras, and other peoples from the southern coast of Asia Minor and “the Islands of the Sea”—whose overthrow by Rameses III, in a sea-fight near the mouth of the Orontes, is commemorated on the pylon of Medinet Habou (see Fig. 9).

To sum up the evidence as to this remarkable ivory relief. The carvings at the two ends, representing groups of goats and oxen, belong to the usual Mycenæan cycle, and are practically indistinguishable from the designs on the mirror-handles from the same Enkomi tombs. The hunting scenes on the sides, however, though executed by the same Cypro-Mycenæan hands, show a form of chariot and types of armour and costume different from the Mycenæan. They are equally divergent from Assyrian fashion, and although much in the design shows a certain relationship to similar scenes on the monuments of Nimroud, Kouyunjik, and Khorsabad, there is no real reason for assigning them to this later period. Their closest affinities lie nearer at hand, and they seem to have been executed to record the prowess of some princely Nimrod belonging to one or other of the contemporary races of the opposite Syrian or Cilician coasts. The closest parallel, both to the chariot and to the horse-trappings, is to be found in those of the Hittite warriors delineated on the monument of Rameses II; the feather helmet most nearly resembles those of the Anatolian foemen of Rameses III.

A certain falling off in the execution makes it reasonable to suppose that the carvings on the draught-box are somewhat later in date than the finer reliefs in ivory found in the same Enkomi tombs, such as the mirror-handle with the warrior and griffin. A feature, moreover, in the inventory of Tomb 58, which contained the draught-box, corroborates this view. It was, in fact, one of the few graves in which was discovered an iron object, in this case remains of an instrument set in an ivory handle in the shape of a bull's leg. This ornamental treatment of an iron object is, as we shall see, characteristic of the beginning of the transitional period which precedes the pure Age of Iron and implies a certain posteriority of date as compared with the tomb-groups containing exclusively implements of bronze.

¹ K. Humann und O. Puchstein, *Reisen in Kleinasien und Nordsyrien*, p. 375 seqq. and Pl. XLVI.

The figures of the armed warrior grappling with a griffin (Fig. 5) that occur on two of the ivory mirror-handles seem, from their superior style, to belong to a somewhat earlier period than the draught-box. These are of special interest in their relation to forms of armour in vogue among the Mycenæans in Cyprus. They bear round shields with a broad circular border, a circumstance which shows that this form of shield—which in the *Ægean* area seems only to have come into use in the period of decadence that produced the "Stela of the Warriors" found in the lower town of Mycenæ—had obtained an earlier vogue in Cyprus. The appearance on these ivories of a round shield coupled with the conical helmet enables us to establish a comparison which gives a singular support to this conclusion. It will be remembered that in the third shaft-grave at Mycenæ there was found a fragment of blue porcelain showing a warrior's head in relief with a helmet, similar to that of the figures on the ivories, save that it shows a horn in front, and part of a round shield.¹ The character of the armour, as well as the Egyptianising material so common at Enkomi, makes it probable that the fragment was either of Cypriote derivation or even from some early *Ægean* plantation in the Delta itself, and shows that the East Mediterranean offshoots of the "Mycenæan" stock had early adopted the round shield in preference to the 8-shaped body-shield, which long maintained itself on the mainland and islands of Greece.

This acquaintance with the round shield is quite in keeping with the fact that the invaders from Western Asia Minor, as well as the Shardana seen in the battle-pieces of Medinet-Habou, in many cases also hold shields of the same form. Another circumstance makes this comparison still more pertinent. Many of the Western warriors on Rameses III's monument are seen armed with a kind of cuirass,² formed of a succession of plates, sometimes horizontal, sometimes rising towards the middle in a double curve (Fig. 9). Cuirasses with plates arranged in the horizontal manner may with great probability be recognised in certain objects figured along with chariots and horses on a class of inscribed clay tablets from the Palace of Knossos. The other type with the double curves recurs in the case of the two warriors grappling with the griffins on the mirror-handles of Enkomi (Fig. 5).

Recent discoveries thus supply a double corroboration of the Homeric tradition which carries back the use of the round shield and the cuirass or *θώρηξ* to the earlier epic period. The poet of the *Iliad*, indeed, makes the breastplate of Agamemnon himself a gift of the Cypriote



FIG. 9.—WESTERN WARRIOR WITH CUIRASS AND PLUMED CASQUE: MEDINET-HABOU.

¹ Reichel, *Homericische Waffen*, p. 58, though he refers to this fragment, passes it over as a foreign importation.

² Cf. W. Max Müller, *Asien und Europa*, p. 364.

King Kinyras.¹ It had ten bands of inlaid metal, a detail which curiously corresponds to the horizontal plates of one variety of the Mycenæan cuirass. In short, the armed figures on the Enkomi ivories present a most valuable illustration of the typical Homeric armour. Here, as in the *Iliad*, the belt or girdle—the Homeric ζωστήρ—which seems to have been fastened behind, follows the lower rim of the cuirass, thus forming a kind of pad round the waist analogous to that which protected the ankles of later Greek warriors from the lower edge of the greaves. Just, too, as in the epic we see this ζωστήρ reinforced by a second belt—ζῶμα—with its belt-plate or μίτρη, so on the ivory relief there is seen a double raised ring around the warrior's waist. It was this second or true belt that seems more particularly to have held the chiton or tunic which we see here falling about the hips.

With such a representation before us, a series of Homeric passages on which Dr. Reichel in his recent work on Homeric armour has exhausted his powers of destructive criticism becomes easily intelligible. In the hands of the critic the passages relating to Agamemnon's breastplate and every other example recorded in the *Iliad* are bracketed as interpolations of no earlier date than the seventh century B.C.,² the period, namely, when cuirasses are first historically known. In the few passages where the word θώρηξ is allowed to pass muster, it is transferred by Dr. Reichel to the body-shield.

By the same Procrustean method the greaves of the ἐϋκνήμιδες Ἀχαιοὶ are reduced to pads of leather—or at most, in Achilles' case, of tin—to protect the shin

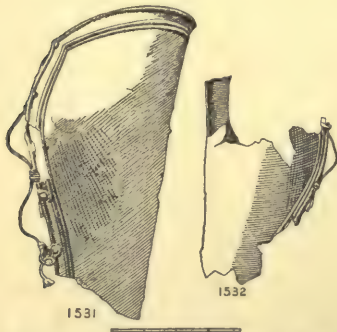


FIG. 10.—BRONZE GREAVES FROM ENKOMI.

from the heavy body-shield. That such were worn and for the reason given is probable enough, but the danger of endeavouring to prove too much is again illustrated by the discovery in Tomb 15 at Enkomi of a pair of bronze greaves (Fig. 10). The tomb in which they occurred was of the usual Mycenæan kind, and they were associated with a bronze dagger of a typical form. But Dr. Murray comments on the find as follows³:—"It is contended by Reichel that metal greaves were unknown to Homer. He is satisfied that they were the invention of a later age (about

700 B.C.). Should he still be of that mind, then our greaves may be of some importance in fixing the date of the Enkomi tombs." Some may think that the concordant evidence supplied by the Enkomi tomb-groups is of more importance than the authority of the ingenious Dr. Reichel in fixing the date of the greaves.

That bronze greaves of pure Mycenæan fabric would ultimately be discovered had long been my own expectation, for the following reason. That such existed in Greece in the succeeding "Dipylon" Period is not yet made out. But it is important

¹ *Iliad*, xi, 19 seqq.

² p. 16.

³ *Homerische Waffen*, p. 102.

to bear in mind that, during the same period, an Early Iron Age culture was developed in the north-western part of the Balkan Peninsula, and perhaps throughout a still wider archaeological province, which in many ways preserves the continuity of earlier Mycenæan tradition in a more uncorrupted form than the contemporary "geometrical" art of Greece.¹ This is shown by the appearance of certain specifically Mycenæan forms of objects—such as, to take a single example, the finger-ring with the major axis of its bezel at right angles to the hoop—and also by a curious survival of the Mycenæan spiraliiform decoration. But among the characteristic accompaniments of warriors' remains in these early tombs are bronze greaves² ornamented in this case not only with the concentric circles and tangential connexions that represent the decay of the older returning



FIG. 11, 1 AND 2.—ORNAMENTAL IVORY BOSSES, MYCENÆ.

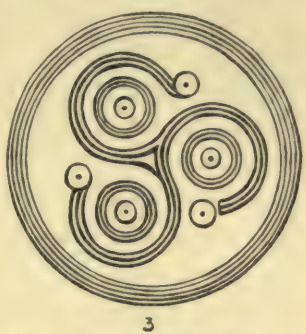


FIG. 11, 3.—ORNAMENT ON BRONZE GREAVES, GLASINAC.

spiral border, but by a central design of triquetral curves (Fig. 11, 3), the Mycenæan prototypes of which will be recognised in the gold and ivory bosses found by Schliemann in the shaft-graves (Fig. 11, 1 and 2).

Among the most interesting discoveries of Enkomi was a Mycenæan bronze foundry containing shovels, hammers, tongs, and other implements. With these was found a large copper slab with incurving side which unquestionably represents an ingot (Fig. 12). It is stamped with the Cypriote character *si* and recalls a large number of ingots



FIG. 12.—COPPER INGOT: ENKOMI.

found in the Bronze Age deposits of Sardinia, many of which are impressed with signs in a similar manner. On some of the clay tablets referring to the royal treasures of Knossos are engraved ingots of similar form, also in some cases

¹ The evidences of this Illyrian culture have been brought to light of recent years by the excavations of Radimsky, Truhelka, Fiala, Hoernes, and other explorers in the prehistoric cemeteries of Southern Bosnia and the Herzegovina (see *Wissenschaftliche Mittheilungen aus Bosnien und der Herzegovina*, 1893, etc., passim; and *Glasnik Zemaljskog Muzeja u Bosni i Hercegovini*). In my Rhind Lecture on the "Ancient Venetic Art Province and its Influence on the Celtic Races," an abstract of which was published in the *Scotsman* (December 14th, 1895), I pointed out the Mycenæan traditions in this Illyrian culture and the link which they supply between the decorative system of prehistoric Greece and that of "Late Celtic" art.

² *Wissensch. Mitth. aus Bosnien*, III, p. 11, Fig. 23, from a barrow at Glasinac.

countermarked with linear signs and accompanied by inscriptions in the same Mycenæan script. They are in several cases followed by a balance (τάλαντον) and cyphers apparently indicating their value in Mycenæan gold talents. The scales of a large balance were also found at Enkomi.¹

These parallels are the more interesting in their relation to a piece of Egyptian evidence. On the walls of the Rekhmara tomb at Thebes, already referred to as belonging to Thothmes III's time, the Kefts and People of the Islands, who in other ways are so intimately associated with the Mycenæans, are seen bearing ingots of precisely the same form, marked with the copper sign. On another contemporary tomb an ingot of this shape is being carried to the melting-pot of an Egyptian foundry.

The appearance on the Enkomi ingot of a character of the Cypriote syllabary does not stand alone. Dr. Murray remarks that "on a certain number of vases Cypriote letters have been found. These letters were painted by the potters before the vases were fired." This observation is of extraordinary interest, but perhaps owing to the fact that the writer himself believed the Mycenæan vases in question to date from about 700 B.C., the importance of the phenomenon is so little appreciated that it has not been thought necessary to reproduce the letters thus preserved. The use of characters identical with those of the later Cypriote syllabary among the Mycenæan population of the island is, however, corroborated by another discovery, hitherto equally ignored. In a typical Mycenæan tomb on the Tekke site, near Larnaka, excavated in 1898 by Mr. H. B. Walters, was found a gold ring engraved with characters (Fig. 13) which in the British Museum inventory are



FIG. 13.—ENGRAVED
RING: ENKOMI.

set down as imitations of Egyptian hieroglyphs. The characters are contained between two decorative scrolls and are four in number. The sign below answers to the Egyptian ankh or "life symbol," which recurs, perhaps as a religious symbol, on a gold ring from Enkomi. Forms of the ankh are also of frequent occurrence, often associated with divinities, on contemporary "Hittite" seals. It further appears that some varieties of the Cypriote character *ra* resemble this Egyptian sign,² which also recurs, probably with a syllabic value, among the linear forms of the Mycenæan script found in the Palace of Knossos.

This ankh sign, which on the signet ring stands apart from the others, may be therefore either a symbol or a letter. Of the other three signs, however, 8 is identical with the Cypriote *le* and T with *na*. ^ is possibly a form of Λ = *ko*. None of these forms are Egyptian.

A fragment of a clay *pitheos* was discovered at Enkomi with inscriptions in the ordinary Cypriote script painted on it in red.³ It was found outside the

¹ *Excavations in Cyprus*, p. 17, Fig. 32.

² See the forms of this sign from Golgoi in Kollitz's table (*Dialekt-Inschriften*, Vol. 1).

³ *Excavations in Cyprus*, p. 3, Fig. 2.

dromos of a tomb, and there is therefore no evidence as to its date. Its interpretation presents great difficulties.

Still more enigmatic, however, are the signs engraved on three clay balls¹ (Fig. 14, Nos. 765, 766, 768), which, though not found actually in a tomb, lay in such proximity to it as probably to date from the same early period. Dr. Murray compares the signs on one of them with the conventionalised pictographic or hieroglyphic script of Crete, but at most there is only analogy between the two. We may perhaps trace the degradation of an animal's head in the first sign of No. 765, or a human palm in the fifth sign. A few simple forms approach

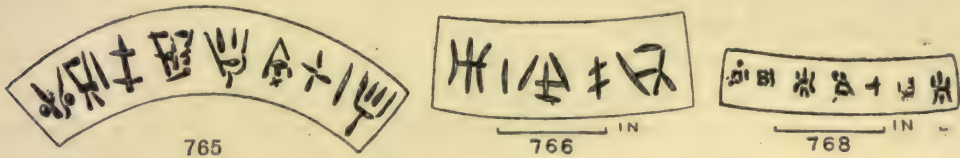


FIG. 14.—INSCRIPTIONS ON CLAY BALLS FROM ENKOMI.

those of the Cypriote syllabary, *e.g.*, the *pa*, *si*, *lo*, and *ta*. The newly discovered linear script of Knossos also presents about the same number of resemblances, and we see in Nos. 765 and 766 vertical lines introduced with the apparent purpose of dividing words as on the Cretan tablets. In the present state of our knowledge of the scripts of the Mycenaean Age it is unsafe to go beyond these general comparisons.

The time is past when the evidence of the existence of the Cypriote syllabary in Mycenaean times can excite surprise. The clay archives of the Palace of Knossos conclusively show that in the Ægean world there existed at least as early as the fifteenth century B.C. a highly developed form of linear script containing a series of forms practically identical with those in use down to a much later date by the Greeks of Cyprus.

Sufficient evidence has already been given of the general contemporaneity of the Mycenaean remains at Enkomi and other Cypriote sites with the Ægean relics found in Egyptian deposits at Tell-el-Amarna, Gurob, and elsewhere, and belonging to the latter part of the Eighteenth and the beginning of the Nineteenth Dynasty. But over and above these Egyptian comparisons a very valuable indication of the early date of these Cypro-Mycenaean tomb-groups is supplied by a negative phenomenon of great significance. Iron here is either altogether absent or only sparsely employed almost as a precious metal. "Not only," writes Dr. Murray, "is iron scarce, but wherever it does occur it is associated with marks of respect, such as being mounted with an ivory handle or knob" (p. 25). Bronze implements were otherwise universally in use at the date of these sepultures. Such tentative use of the new metal as is found is characteristic of the first beginnings of the transitional period that precedes the true Iron Age. The incipient use of iron for

¹ p. 27, Figs. 58, 59, 60.

ornamental purposes has been noted among the later remains at Mycenæ itself. In the shaft-graves of the Akropolis iron is altogether absent, while, on the other hand, in the graves of the lower town, marked by the first appearance of the fibula, a few iron finger-rings occurred.

Yet between these latest Mycenæan deposits in Greece itself and the earliest monuments of archaic classical art that go back to about 700 B.C. there intervenes a pure Early Iron Age of some centuries' duration, characterised by the various phases of Geometrical art. It is the same in Cyprus itself. In the tombs of the so-called "Cypro-Phœnician" period, which covers the interval in the island between the predominance of Mycenæan culture and the beginnings of classical art, the use of iron for cutting purposes has become general. This period, which, according to Dr. Ohnefalsch Richter, extends from the twelfth to the seventh century B.C., shows a geometrical style in some respects parallel to that seen in the Dipylon cemetery and elsewhere in contemporary Hellas. A special product

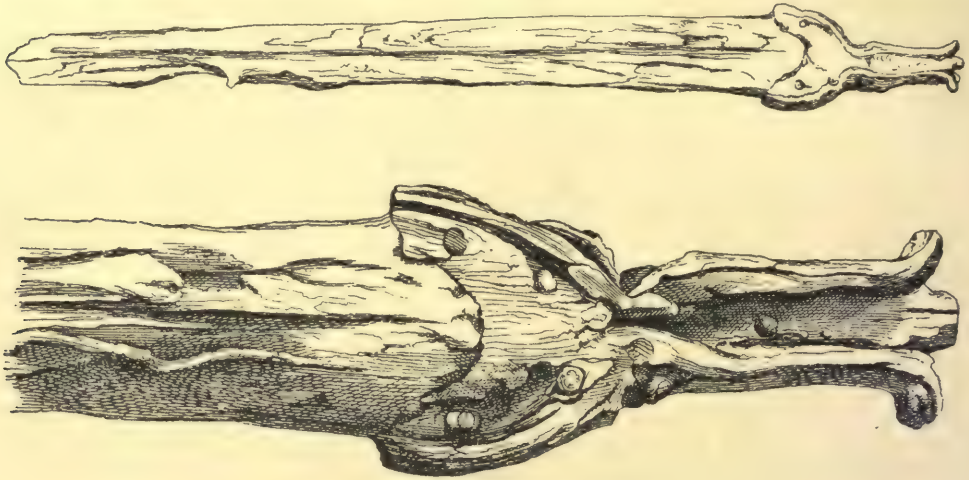


FIG. 15.—IRON SWORD FROM CURIUM.

of this Cypriote Iron Age is a form of sword (Fig. 15),¹ which is simply a translation into the new metal of a bronze form belonging to the close of the Mycenæan period² in Greece. The type is of northern importation and foreign to true Mycenæan tradition. The great interest, indeed, of this class of swords is that though in their earliest form themselves straight-sided, they were the forerunners of a widespread European race of bronze swords with leaf-shaped

¹ Found at Curium; in the possession of Dr. Julius Naue (Undset, *Forhandlinger i Videnskabs Selskabet*, Christiania, 1886, No. 14). For another from Marion, see Helbig, *Hom. Epos*, p. 130, note 5.

² This is shown by the occurrence of a sword of this type in the Bronze Hoard No. 1, from the houses explored by Dr. Tsuntas outside the Akropolis of Mycenæ (Tsuntas, *Ἐκ Μυκηνῶν*, *Ἐφ. Ἀρχ.*, 1891, p. 26). A similar bronze sword was found in the "Cyclopean House" near the so-called "Agora" at Mycenæ, explored by Dr. Schliemann (*Mycenæ*, p. 144, Fig. 221). Another from Olympia is described by Sophus Müller (*Der Europäische Bronzealters Oprindelse*, p. 325, Fig. 27).

blades, which may be traced from Hungary to Scandinavia on one side,¹ and on the other through Gaul to the British Islands.² The fact that the Cypriote iron form belongs to the earlier straight-sided type itself argues a considerable antiquity, which is enhanced by the Mycenæan associations in which its immediate prototype in bronze is found.

That the general use of iron was diffused in Cyprus at a very early date is an almost inevitable inference from the close relations in which the island stood to the neighbouring Syrian coasts,³ which were in all probability the earliest centres of iron-working. Vessels of iron, some of them with silver handles, seem to have been already imported into Egypt from Syria and Canaan as early as Thothmes III's time (c. 1503-1449 B.C.)⁴ and the Rutennu who owned Damascus, so famous in after times for its tempered steel, brought to this Pharaoh a tribute of unwrought iron and arms and chariots of the same metal. The invading Israelites, as we learn from the books of Joshua and Judges, found to their cost that the use of "chariots of iron" was already general among their Canaanite foes. In Northern Syria the exceptionally early use of iron in war is also well authenticated. The Assyrian King Tiglathpilezer (Tüklat-Pal-Asar) I, who invaded the North Syrian region of Commagênê (Kümmük) in 1130 B.C., with his "brazen-wheeled" chariots, carried off from that and the adjoining countries vast spoils of iron as well as bronze.⁵

There is every reason for supposing that in Cyprus the beginning of the Iron Age did not lag behind that of the neighbouring mainland regions. Yet the great bulk of the Mycenæan tombs of Cyprus belong to the pure Bronze Age, and in only a few cases is there evidence of that incipient acquaintance with iron in which it is regarded almost as "a precious metal." In view of this concordant archaeological evidence, it seems impossible to bring down the latest of these Cypro-Mycenæan interments beyond at most the twelfth century B.C. But in order to satisfy the views put forward in the British Museum publication before us it would be necessary to suppose that the Bronze Age of Cyprus, so far from reaching its term somewhat earlier than that of Greece and Italy, came down five centuries later, to the date, namely, of the François vase and to the borders of the period of fully developed classical art. It is superfluous to point out that conclusions such as this are incompatible with the best ascertained archaeological data as to the gradual succession of distinct phases of civilisation in the East

¹ See Undset, *Études sur l'Age de Bronze en Hongrie*, i, p. 148.

² See J. Evans, *Ancient Bronze Implements of Great Britain*, p. 273 seqq.

³ Mr. J. L. Myres remarks (*Cat. of the Cyprus Museum*, p. 21), "The very early appearance of iron and its great frequency at this time are a measure of the close intercourse of Cyprus with the Syrian coast, the only area in which iron-workings may be suspected to be earlier. Cyprus has considerable masses of iron ore of fair quality, and there is evidence that they were discovered and worked as soon as the knowledge of the metal extended."

⁴ Birch, in Wilkinson's *Ancient Egyptians* (1878 edition), vol. ii, p. 251; Pierret, *Dict. Archéologique Égyptien*, p. 104; Th. Deveria, *Mélanges d'Archéologie Égypt. et Assyr.*, i, 2; W. Max Müller, *Asien und Europa*, pp. 153, 154.

⁵ J. Menant, *Annales des rois d'Assyrie*, pp. 36, 37. Cf. J. de Morgan, *Les premiers Âges des Métaux dans l'Arménie Russe*, pp. 200, 201.

Mediterranean basin. The long centuries of the iron-using Geometrical Period alike in Cyprus and in Greece proper are either left out of account or a Mycenæan Bronze Age is interposed between them and classical times. It is impossible to conclude without an expression of regret that views so subversive of the fixed points of antiquarian science should receive encouragement from a quarter which, on more purely classical ground, we have all been accustomed to regard as authoritative.

A CLASSIFICATION OF THE STONE CLUBS OF BRITISH NEW GUINEA.

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Cambridge.

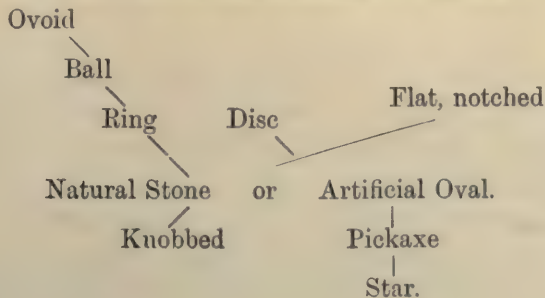
[WITH PLATES XIX TO XXIII.]

DURING my recent short visit to British New Guinea I have had the opportunity of seeing a considerable number of stone clubs. The Hon. D. Ballantine, of Port Moresby, kindly gave me free access to his collection, which is probably unrivalled among private collections in completeness, and it has, further, the inestimable advantage of nearly every specimen being marked with a precise and accurate locality. Such being the case, I have not hesitated to base this tentative classification of the stone clubs of British New Guinea on the specimens in Mr. Ballantine's collection; but I have not absolutely confined my studies to that collection, and I have alluded to a few types which are not—or were not—there represented.

The figures which illustrate this paper are sketches from photographs, taken after I left Port Moresby by Mr. B. W. Bramell, of specimens from Mr. Ballantine's collection.

In offering this classification to my ethnographical colleagues I do not pretend to have exhausted the subject, as that would entail a prolonged study of specimens in Australian and European museums; but I shall feel satisfied if I have assisted museum curators to a better comprehension of the forms of clubs and of their distribution in British New Guinea.

At the present day, a classification is not considered perfectly satisfactory unless it is at the same time phylogenetic. I cannot profess to satisfy this demand; all that I can do is to suggest that a few divergent series can be established, each of which emerges by easy gradations from a generalised group of "natural stones." The following diagram explains my meaning:—



The order in which these series are described is of little consequence, but on the whole, that adopted below appears to me to be as convenient as any other, and it will be observed that it deals with the simpler forms first.

- I. NATURAL STONE CLUBS, OR CLUBS WITH A SLIGHT AMOUNT OF WORKING.
- II. RING CLUBS.
 1. Unflanged; 2. Flanged.
- III. BALL CLUBS.
 1. Unflanged; 2. Flanged.
- IV. OVOID CLUBS.
 1. Short and thick; 2. Long and tapering; 3. Cylindrical; 4. Barrel-shaped; 5. With an equatorial swelling.
- V. DISC CLUBS.
 1. Oval; A. Thick; B. Thin; 2. Various shapes; A. Oblong; B. Triangular; C. Diamond; D. Lakatoi; 3. Circular; A. Biconvex, thick; B. Biconvex, thin; C. Flattened, thin; D. Flattened, thin, and flanged; E. Undulating.
- VI. FLAT CLUBS WITH NOTCHED EDGES.
 1. With a single row of notches, no flange; 2. With two rows of notches; A. Unflanged; B. Flanged.
- VII. KNOBBED CLUBS.
 - A. Unflanged knobbed clubs. 1. Natural stone clubs, or clubs with a small amount of working. 2. Knobbed ring clubs; *a*. One row of knobs; *b*. Three rows of knobs. 3. Knobbed ball clubs with four rows of knobs; *a*. More or less spherical; *b*. Oval; 4. Depressed oval knobbed clubs. *a*. Four rows of knobs; *b*. Five rows of knobs; *c*. Six rows of knobs; *d*. Seven rows of knobs; *e*. Eight rows of knobs. 5. Human-head knobbed club; 6. Ovoid knobbed clubs; *a*. Knobs disposed vertically; *b*. Knobs disposed obliquely; *c*. Barrel-shaped.
 - B. Flanged knobbed clubs. 1. One row of knobs; 2. Two rows of knobs; 3. Three rows of knobs; 4. Four rows of knobs; 5. Five rows of knobs.
 - C. Wooden knobbed clubs.
- VIII. PICKAXE CLUBS.
 1. Pickaxe clubs with two points; 2. Pickaxe clubs with four points; A. Unflanged; B. Flanged; 3. Complex pickaxe clubs.
- IX. STAR CLUBS.
 - A. Unflanged.
 - B. Flanged. 1. Four rays; 2. Six rays; 3. Seven rays; 4. Eight rays; 5. Ten rays.
 - C. Complex flanged.

I would like to take this opportunity of acknowledging my indebtedness to Mr. Ballantine for much kindness and for giving me considerable information respecting the clubs of British New Guinea, and also to my colleague Mr. A. Wilkin for helping me in the measuring of the clubs.

The number or letter in brackets which follows the reference to the figure refers to the number of the specimen in the Ballantine collection. All the measurements are given in millimètres. At the end of the description of each club I have given the measurements of the stone head.

The Roman numbers in brackets after the localities refer to the districts I have adopted; each district is defined in the "Notes on the Geographical Distribution of Stone Clubs in British New Guinea" at end of this paper.

There can be little doubt that primitive man early learnt to employ stones for offensive as well as for industrial purposes. In most inland places in a state of nature stones are rarely to be found except in river beds, and there they are usually rounded. Occasionally, river pebbles are found with a natural perforation through them; such a stone only requires to have a stick thrust through the hole to be converted into a stone club. I do not remember to have seen a Papuan stone club with a head entirely ready-made by nature, but I have seen several clubs the heads of which were water-worn stones through which a hole had been artificially bored. Amongst a number of rude clubs from the Papuan Gulf in the Ballantine collection I have selected one or two for special description.

I. NATURAL STONE CLUBS, OR CLUBS WITH A SLIGHT AMOUNT OF WORKING.

In Fig. 1 (A) we have an illustration of a roughly quadrangular quartz stone with rounded angles. The somewhat flattened surfaces of this and the following specimen appear to me to be natural and not artificial. It is artificially perforated by a large hole. The thin handle is 890 mm. long and tapers below and ends bluntly. Toaripi ("Motumotu") (II). (Length 80, breadth 70, height 50.)

Very similar in shape to the former is a white, gritty stone club, Fig. 2 (B), which has become blackened. There are ten fine radial lines scored on the upper surface. The straight, rough handle is 900 mm. long and has a rounded end. Siro (II). (Length 70, breadth 70, height 50.)

A light grey, gritty stone club, Fig. 3 (C), has a somewhat elongated reniform contour and is painted with pink and white pigment. The perforation is the only sign of workmanship in the stone. The rude, straight handle is 770 mm. long, and a strip of bark cloth is wrapped between the stone and the handle. Wōmai (II). (Length 128, breadth 90, height 45.)

Another stone, Fig. 4 (D), has an irregular and undulating reniform contour. I think this is also an entirely natural stone, the surface of which has been ruddled. There is a small, deep, natural depression in this stone. Ten irregular, artificial, vertical grooves have been filled in with lime. The short (660 mm.) thin handle has a uniform thickness. Wōmai (II). (Length 90, breadth 65, height 45.)

An irregular, flattened, oval club (E) has been roughly ground down, but several flaws have been left on the under surface; the sides have their edges somewhat squared. There are eleven nicks at one end and fourteen at the other. The short (560 mm.) straight handle has a little rough cane plaiting at the stone. Siro (II). (Length 115, breadth 75, height 32.)

II. RING CLUBS.

I employ the term "ring clubs" for those which have more or less circular or oval stones; these are generally small in size, and as the perforation is usually large, they have a ring-like appearance. Some of these appear to be natural stones, or they may be slightly or unmistakably worked.

1. UNFLANGED RING CLUBS.

An oval, apparently naturally rounded pebble, with a worn surface (4), has had a large hole bored through it. The handle (885 mm.) is straight and ends abruptly; the stone is jammed on, and there is a simple band pattern incised round the handle a short distance below the stone. Opau (II). (Length 75, breadth 63, height 46.)

One example, Fig. 5 (F), of a dark igneous rock may well be a natural stone, but it has probably been roughly ground down. Looked at from above, it is roughly triangular in contour, with well-rounded angles. The short (730 mm.) thick handle tapers slightly at each end, and has a blunt end. There is some coarse cane plaiting below the stone. Wōmai (II). (Length 87, breadth 84, height 30.)

An undoubtedly worked oval club, Fig. 6 (G), is biconvex in section, and it has a slight suspicion of an edge. The thick handle is oval in section, 1 mètre long, and terminates in a blunt end; there is coarse cane plaiting at the stone, and it is decorated with cassowary feathers. Moveave (II). (Length 118, breadth 98, height 50.)

Fig. 7 (H) is a somewhat similar stone, with rounded sides. Originally it was a white, gritty stone, but the general surface has been blackened. The lower portion of the perforation has been recently enlarged, and so it is whitish. There are two deep and wide terminal notches, which have been ruddled, and five smaller notches on one side and six on the other. The latter are traversed by a longitudinal, horizontal groove. All the lateral notches show the light colour of the stone except two terminal notches, which are reddened. The thick handle tapers at each end, and the grip terminates with three raised rings; it is 720 mm. in length. Oraruru (II). (Length 98, breadth 75, height 50.)

2. FLANGED RING CLUBS.

There is in the Australian Museum, Sydney, a ring club with a small flange, Fig. 8; it is painted with transverse white lines, and may have come from the Papuan Gulf.

III. BALL CLUBS.

1. BALL CLUBS WITHOUT A FLANGE.

I allocate to this group those clubs which have been artificially rounded so as to produce a more or less spherical ball. Most frequently the stone is more orange-shaped than spherical. Intermediate forms may be seen between this group and the "ring clubs."

The diameter of the majority of these clubs is greater than the height, and they are generally approximately circular in horizontal section, but some are distinctly oval. Very rarely the diameter and the height are approximately equal, and as rare is it to find one in which the diameter is less than the length. Clubs of this kind pave the way to the next group. Frequently the stones are simply jammed on to the handles.

Fig. 9 (1) is a ball club in which the diameter is considerably greater than the height. The handle is long (1,245 mm.), crooked, of uniform thickness, and ends abruptly; there is cane plaiting at the stone. Hogere (IV). (Diameter 85 × 76, height 56.)

A grey and white mottled stone, Fig. 10 (2), has been carefully shaped; it is slightly biconical rather than spherical. The long (1,257 mm.) handle tapers below to a stout point, and there is plaited cane at the upper end. Adori (IV). (Diameter 88, height 67.)

The stone of Fig. 11 (3) has been jammed on to a rude handle (763 mm.), which ends bluntly at the grip. Siviki (II). (Diameter 70, height 52.)

A club, Fig. 12 (5), which looks as if it were intended to be spherical, is hafted on to a very long (1,390 mm.) thick handle, which ends abruptly. There is fine cane plaiting above and below the stone, which expands in a saucer-shaped manner close to the stone. Vafare (IV). (Diameter 70, height 62.)

A club in which the height of the stone is greater than the diameter is seen in Fig. 13 (6); it is a grey stone with lighter inclusions. The very long thin (1,400 mm.) handle ends below in a cone. Iaritari (IV). (Diameter 75, height 62.)

There is in the Cambridge Museum a broken biconical stone with an equatorial flat band, 15 mm. broad. Mer, Torres Straits (I). (Diameter 105, height 67.)

2. FLANGED BALL CLUBS.

There is a well marked variety of the "ball club" in which a small flange is present. The three examples in the Ballantine collection come from Hogere, Havere, and Iovi—that is, from the district between the Astrolabe Range and the Main Range.

A typical flanged ball club, Fig. 14 (7), is a rough stone in which the diameter exceeds the height. It is mounted on a rude handle 990 mm. long. Hogere (IV). (Diameter 85, diameter at flange 52, height 65.)

IV. OVOID CLUBS.

The clubs of this group vary so much in form, but within comparatively small limits, that it is difficult to subdivide them. In the great majority of specimens the sides are convex. These clubs vary by insensible gradations from short and thick to long and tapering. This kind of club has been called the "emu's egg club." In a few clubs with nearly straight sides the ends may be abruptly squared or they may taper in the usual manner. The ovoid clubs with well made and highly polished stones appear to be almost confined to the district between the Astrolabe Range and the Main Range; but unpolished ovoid clubs occur all round the Papuan Gulf, up the Fly River (*cf.* D'Albertis, *New Guinea*, II, p. 86), and even among the Tugeri head-hunters who live on the coast beyond the Dutch boundary.

1. SHORT AND THICK.

A short and thick form of ovoid club with convex sides is seen in Fig. 15 (10). The very long (1,680 mm.) and rather thin handle tapers below and ends in a cone. Taburi (IV). (Diameter 80, height 100.)

2. LONG AND TAPERING.

A long and tapering form of ovoid club is illustrated by Fig. 16 (11). The extremely long (1,740 mm.) handle resembles that of the last, but it is much thicker, and there is cane plaiting above and below the stone. Taburi (IV). (Diameter 77, height 128.)

3. CYLINDRICAL.

A nearly straight-sided type with truncated ends, Fig. 17 (8), is fitted on to a long (1,422 mm.) smooth handle, which ends in a blunt cone. Korohi (IV). (Diameter 71, height 94.)

4. BARREL-SHAPED.

Fig. 18 (9) has a somewhat similar form to the last, except that it tapers off gradually at each end. The long (1,491 mm.) thick handle ends abruptly and is encircled by a band of plaited cane at the grip to prevent further splitting; there is plaited cane above and below the stone, and the club is further decorated with a bunch of parrot feathers. Taburi (IV). (Diameter 66, height 106.)

5. WITH AN EQUATORIAL SWELLING.

The Ballantine collection has two specimens of ovoid clubs with a central or equatorial swelling, which come from Taburi and Maiari (Havere) respectively.

An example, Fig. 19 (12), of this well marked type is mounted without cane-work, on a rough handle 820 mm. long. Taburi (IV). (Diameter 71, height 92.)

A very rare club, Fig. 20 (13), belongs essentially to the barrel type (*i.e.*, Fig. 22), but it has an oblique, central, band-like swelling on which there are four flattish surfaces. The perforation is wider than in the last. It is jammed on to a long (1,110 mm.) slender handle that tapers below, but does not end in a point. It is an open question whether this a distinct type of club, or merely a broken and reground specimen of another group. Maiari (IV). (Diameter 64, height 74.)

V. DISC CLUBS.

All stages can be found in this group from slightly worked slabs of stone which may be irregularly oblong, oval, or circular in contour, to the finely polished, thin, flattened, flanged circular discs.

1. OVAL DISC CLUBS.

A. *Thick.*

A thick, distinctly biconvex, oval club with a blunt edge, Fig. 21 (58), has one end broader than the other. The rude handle is 680 mm. long, and has cane plaiting

above and below the stone; it terminates in a small button. Okuma (Kabadi) (III). (Length 103, breadth 77, height 31.)

A moderately thick club, Fig. 22 (59), is flattened above and below; one end is broader than the other, and there is a blunt edge. The handle is 865 mm. long, and tapers at each end. It is decorated by a band of a simple incised pattern and has three raised bands below the grip. There is plaited cane at the stone. Maipua (II). (Length 123, breadth 92, height 24.)

Somewhat similar to this is an oval club in the same collection, with flattish sides and a slight edge. It is somewhat flat above and below. The short (500 mm.) rude handle has a uniform thickness, and there is bark cloth and coarse plaited cane at the stone. Karama (II). (Length 127, breadth 81, height 21.)

A finely worked stone, Fig. 23 (60), has one end more obtuse than the other, and one side straighter than the other; the edge is fairly sharp. The handle tapers to a point. It is 1,155 mm. long. There is rough cane plaiting above and below the stone. Wōmai (II). (Length 185, breadth 104, height 36.)

A broken stone, Fig. 24 (61), without a handle has a very irregular ellipsoidal contour and a sharp edge. Orokolo (II). (Length 204, breadth 85, height 25.)

B. *Thin.*

There is in the Ballantine collection a very large, flattened, oblong-oval club, Fig. 25 (62), with sharp edges. The rough handle is 832 mm. long. It tapers at each extremity and ends squarely. Deduri (Hogere) (IV). (Length 228, breadth 167, height 17.)

An interesting disc, Fig. 26 (63), was originally part of a very much larger disc, as on one side there is the remains of the original central hole, which can be seen in the illustration. It has not only been refashioned into an irregularly oval disc, but it has been ground afresh on both surfaces so as to form a flattened plate with sharply bevelled edges. There is a short (540 mm.) rude handle which tapers at each end. The stone is simply jammed on to the handle. Karama (II). (Length 121, breadth 88, height 11.)

2. DISC CLUBS OF VARIOUS SHAPES.

This division will doubtless be extended in the future, but at present it is hardly necessary to make a distinct group of every vagary of form.

A. *Oblong.*

More distinctly oblong in contour is a small club, Fig. 27 (64), with rounded corners. The sides are almost squared, and the ends have sharp edges. The handle tapers and ends in a blunt point below; it is 990 mm. long and has fine cane plaiting above and below the stone. Wōmai (II). (Length 123, breadth 82, height 20.)

In the Ballantine collection is a club (65), which, so far as I am aware, is unique. The stone is an old adze blade made of a limestone, which is full of fossil shells. It has a sharp edge at both ends. There is a long (1,357 mm.) stout

handle, which tapers at each end. It is pointed below, and there is plaited canework above and below the stone. Vailala (II). (Length 280, breadth 125, height 27.)

B. *Triangular.*

The Ballantine collection contains two examples of this rare type. A small example, Fig. 28 (66), is almost an equilateral triangle with rounded angles. It is flat above and below. The rude handle (715 mm.) is squared below. Karama (II). (Length of sides 130, 125, 125.)

A larger specimen, Fig. 29 (67), is almost a right-angled triangle, but the contour is irregular. It is plano-convex on one side and has sharp edges. The palmwood handle is probably not original. Orokolo (II). (Length of sides 220, 170, 180.)

C. *Diamond.*

There is in the Australian Museum, Sydney, a diamond-shaped stone head (Fig. 30), which, from the characteristic painting of its surface, may come from the Gulf district; it measures about 160 × 130 mm. in its greatest diameters.

D. *Lakatoi.*

This is a rare form of club, in which the flat stone has the form of a more or less elongated conventional heart—that is, with curved sides, one end pointed, and the other notched or emarginate, thus resembling the characteristic sail of a *lakatoi* trading canoe. Fig. 31 is a sketch of one that came from the Gulf District.

3. CIRCULAR DISC CLUBS.

A. *Biconvex, Thick.*

There is a circular disc club of considerable thickness, which is a rare form but was not represented in the Ballantine collection.

Fig. 32 is a well-worked stone. The handle (706) is of thick ratan, the ends are cut square, the grip is decorated with simple incised patterns, there is a string loop. Cf. also Pl. XXII, Fig. 1, Yam Island, Torres Straits (I), (diameter, 103; thickness, 28).

B. *Biconvex, Thin.*

The most frequent type is a biconvex disc with a sharp edge. Those clubs are very common and vary considerably within certain limits as to size, contour, and thickness. I have selected for illustration a typical example, Fig. 33 (68). The handle (850 mm.) tapers below and terminates in a cone. Below the stone is some plaited cane, as well as some strips of dried leaves and half a dozen turns of a string of human hair. The handle is surmounted by a bunch of feathers of the cassowary and Torres Straits pigeon. Gasiri (IV). (Diameter 147, thickness 20.)

The following abbreviated notes on 53 of the numerous circular disc clubs in the Ballantine collection will give a general idea of those that are characteristic of the Central Division (District IV) of British New Guinea.

1 specimen (diameter 101, thickness 18); handle (1,003) tapers to a blunt end, polygonal cane plaiting above the stone, bunch of parrot's feathers. This club, though bought on the coast, came from inland.—Tupuselei.

6 specimens (diameter 125–155, thickness 15–20); all handles (803–854) taper below, five end in a cone, one in a point; all have plaited cane above the stone; four are decorated with feathers, and two with strings of human hair.—Gasiri.

16 specimens (diameter 113–187, average thickness 15–20), few are really circular; all the handles (687–982), taper below, and fifteen terminate in a cone and one in a point; all have cane plaiting above the stone; seven have feathers and five human hair.—Hogere.

12 specimens (diameter 114–178, thickness 15–20); many are irregular and almost oval in contour. Handles (710–1,200), some taper gently to the stone, but all taper to the end; three have pointed ends at the grip, several have conical ends, and a few have the ends variously carved; all have more or less cane at the stone end, but only one has feathers. The handles average a considerable length.—Eaha.

3 specimens (diameter 128–168, thickness 17–18); handles (666–922) end in a cone, one with polygonal plaited cane above the stone, and one with feathers.—Favere.

15 specimens (average diameter 115–150); handles range from 645–865; most of them end in a cone.—Behind the Astrolabe Range.

C. *Flattened, Thin.*

A distinct type of disc club is one in which the disc is very much flattened above and below, Fig. 34 (69), and the edge is sharp. There is a black palmwood handle (815 mm.), which has a blunt point below. There is plaited canework at the stone. Boura (IV). (Diameter of disc 152–162, thickness 11.)

A remarkably large disc of the same type, Fig. 35 (70), has an irregular contour. The thick handle (817 mm.) tapers above and below and ends in a cone. There is cane plaiting above and below the stone. Hogere (IV). (Diameter of disc 207–226, thickness 16.)

D. *Flattened, Thin, and Flanged.*

Another beautiful type of disc club, Fig. 36 (71), is one with a flattened surface very similar to the last type, but provided with a low but distinct flange. The handle (770 mm.) has some incised carving below the grip and cane plaiting on each side of the stone; this plaiting is finished off above and below by a raised collar. Toaripi ("Motumotu") (II). (Diameter 165 × 155, average thickness 15, thickness at flange 25.)

E. *Undulating.*

In the Ballantine collection is an approximately circular club, Fig. 37 (72), which belongs to the thin biconvex group. Instead of being flat, it is undulating in

such a way that there are two slight lateral depressions—in other words, the club is somewhat saddle-shaped; it has a sharp edge. The very thick handle (590 mm.) has a raised bead below the grip. Kukuku (Kěřma) (II). (Diameter 168 × 153, thickness 20.)

VI. FLAT CLUBS WITH NOTCHED EDGES.

This is not a very satisfactory group, but it serves very well for the present classificatory purposes.

1. CLUBS WITH A SINGLE ROW OF NOTCHES AND NO FLANGE.

A round, flat club, Fig. 38 (73), with a distinct edge is hafted on to a very thick handle (800 mm.), which tapers below and ends in a cone. The disc is painted in red and white with four groups of curved lines, and the notches are similarly coloured. Kěřma (II). (Diameter 139–142, thickness 12; notches 4 mm. deep and 34 in number.)

An oval, thick club, Fig. 39 (74), is similarly coloured. The handle (700 mm.) is thick and straight. Kukuku (Kěřma) (II). (Diameter 152 × 130, thickness 25; notches 5 mm. deep.)

Fig. 40 (E 75) is an irregular, flattened, oval club which has been roughly ground down, but several flaws have been left on the under surface; the sides have their edges somewhat squared. There are eleven notches at one end and fourteen at the other. The short (560 mm.) straight handle has a little coarse plaiting at the stone. Siro (II). (Length 115, breadth 75, thickness 32.)

In the Ballantine collection is a flattened oval club, Fig. 41 (76), with eleven short, nearly equal, blunt points, which are mostly set askew, owing to the interspaces between them being cut obliquely; it shows traces of red and white paint. The thick, tapering handle (670 mm.), ends in a blunt point. The grip is scored with encircling lines. Kěřma (II). (Diameter 108 × 129, thickness 37.)

A round, flattish club, Fig. 42 (T 77), may as well be described here. Round the edge are fifteen stout knobs, 4–7 mm. in length. Corresponding to each of these, on both sides of the disc are two very low rounded knobs. This club may very well be considered as a greatly reduced variety of the depressed knobbed group. The thick, straight handle (660 mm.) ends in a blunt point. Siro (II). (Diameter about 100, thickness 26.)

2. CLUBS WITH TWO ROWS OF NOTCHES.

A. *Unflanged.*

An oval, thick club, Fig. 43 (S), without a flange has two rows of twenty-eight notches. The knobs are from 3 to 8 mm. long. There is a rough, crooked handle 810 mm. long. Karama (II). (Diameter 100 × 85, thickness 40.)

B. *Flanged.*

A flattened, oval club, Fig. 44 (78), has a distinct flange. There are fourteen broad, very irregular teeth. The long (1,421 mm.) thick handle has a blunt point

at each end. Faha (IV). (Diameter 108×123 , thickness 30; diameter of flange 53; thickness of flange 53.) There are several examples of this type in the collection.

VII. KNOBBED CLUBS.

The knobbed clubs constitute a large and complicated group. For the sake of convenience I have classified them as follows, but I would again warn the reader that this arrangement of manufactured objects into groups is very largely empirical, and examples can readily be found which it is difficult to place within a rigidly defined class.

A. UNFLANGED KNOBBED CLUBS.

1. NATURAL STONE CLUBS OR CLUBS WITH A SMALL AMOUNT OF WORKING.

In the Ballantine collection are several clubs from the Papuan Gulf which are either natural stones or are stones which have been ground to a variable extent. These have been incised to a greater or less depth. When the scores are shallow they produce a chequered surface, as in Fig. 45: in Fig. 46 they are deeper; but it is only when they have a considerable depth and form V-shaped grooves that the club possesses a knobbed appearance, as in Fig. 47. The last clubs pave the way to the typical unflanged knobbed club. We have here a distinct series which fits on to the "natural-stone" clubs, but I do not assert that this represents the actual evolution of this group of clubs. It may very well be that the clubs which are before me as I write are as it were degraded forms and merely indicate the laziness or indifference of the makers.

The first of this series, Fig. 45 (I), is a soft, gritty, light grey rock, somewhat ovoid in form, which has probably been slightly ground down. It has been incised with ten to eleven irregular, undulating, horizontal lines and about thirty still more irregular, radiating lines. Some of the grooves are filled in with pink or white paint. The rough, crooked handle is 750 mm. long. Wömai (II). (Length 93, breadth 60, height 40.)

Another example (K) is made of the same rock. It is quadrangular in form, with rounded angles. Possibly it is a natural stone very slightly worked. The incised lines are similar to those of the last club, but the horizontal lines are straighter. There are 8×30 squares. There are eight vertical pink bands, the incisions in the interspaces being whitened. The stout handle is 1 metre in length and tapers at each end. There is coarse cane plaiting above and below the stone. Wömai (II). (Diameter 67×70 , height 41.)

An irregularly rounded club, Fig. 46 (L), has the appearance of being a natural stone that has been partially ground flat on the upper and lower surfaces. The incisions are deeper than in the previous clubs. They are 4×20 in number. The vertical lines are painted light red or white. The rude handle (820 mm.) ends bluntly below. There is coarse cane plaiting below the stone. Karama (II). (Diameter $85-92$, height 47.)

Fig. 47 (J) is an oval grey stone, thicker at one end than the other. A deep groove is cut round the upper and lower ends of the perforation. The upper one forms an incipient flange the other grooves are cut deep, the vertical being the widest and deepest. Thus distinct knobs are formed, their number being 5×16 . The smooth, straight handle (700 mm.) tapers inferiorly and has a bead below the grip. The plaited canework on each side of the stone is finished off above and below by a raised band. Wömai (II). (Diameter 75×88 , height 40 and 50.)

An oval stone, Fig. 48 (41), has been carved so as to produce typical square or oblong knobs, which are irregular in size. There are eight in the vertical and nineteen in the horizontal rows. The longish (1,084 mm.) handle tapers very slightly at each end and ends bluntly. Vailala (II). (Diameter 72×76 , height 47.)

2. KNOBBED RING CLUBS.

All the following clubs have knobs which are distinctly rounded or prominent truncated rectangular pyramids, and differ markedly in character from the foregoing.

a. One row of knobs.

A small ring-like club, Fig. 49 (38), has thirteen low, elongated knobs, which extend across the edge of the stone. The thick, rude handle (780 mm. long) ends abruptly. The stone is simply jammed on to the handle. Wömai (II). (Height 38, diameter 80.)

A club, Fig. 50 (39), of still ruder workmanship has twelve low rounded knobs, which do not extend across the edge of the stone. The irregular handle (905 mm.) tapers below, and the end of the grip is carved like a small dice-box. The rough cane plaiting by the stone is ruddled. The gritty stone has also been reddened above and below the knobs and in every alternate interspace. Opau (II). (Height 40, diameter 90 ; diameter between the grooves 80.)

b. Three rows of knobs.

A white quartz club, Fig. 51 (40), in the Ballantine collection is oval in horizontal contour and has three rows of knobs. Those of the central row are much the largest ; the others are very low and rounded. The long handle (1,070 mm.) tapers below to a point. The stone is situated 122 mm. from the end. This part is covered with fine plaited cane and surmounted by a tuft of parrot's feathers. Owen Stanley Range. (Height 45, diameter 82×90 , height of central knobs 10–12, number of knobs 3×11 .)

3. KNOBBED BALL CLUBS.

A fine old club, Fig. 52 (40A), has large, rounded, widely separated knobs like the last. It has every appearance of being an old club. There are traces of red vertical lines between the knobs. The thick handle (780 mm.) tapers above and below. On each side of the stone there is neat cane plaiting which ends above and below in a raised band. The lower end of the handle is elegantly finished off with

two beads. Opau (II). (Diameter 94, diameter between the knobs 80, height 80, height of knobs 7, number of knobs 4×8 .)

Fig. 53 (42) is a large stone club with unequal, large, rectangular knobs. The thick, heavy, and unwieldy handle (1,425 mm.) tapers at each end. Above and below the stone there is cane plaiting, and the handle ends in a point. Keuru (Vailala) (II). (Diameter 113×87 , height 67; height of knobs up to 5 mm.)

These clubs may be round or oval in section. This group passes insensibly into the next group.

4. DEPRESSED KNOBBED CLUBS.

a. Four rows of knobs.

A depressed club (with the rectangular knobs so worn down as in most cases to be rounded) is seen in Fig. 54 (44). The handle tapers below to a point. The head end is decorated with cassowary feathers. It is 980 mm. long. Wōmai (II). (Diameter 100×106 , height 60; height of knobs 5–6, number of knobs 4×14 .)

b. Five rows of knobs.

The three clubs which I have selected as examples of depressed clubs with five vertical rows of rectangular knobs constitute a short series with regard to the prominence of the knobs, and more particularly of the central horizontal row.

The knobs of Fig. 55 (46) are of moderate size, those of the central horizontal row not being of much larger size than those of the contiguous rows. The handle is long (1,280 mm.) and heavy; it has a diameter at the upper end of 30 mm. which tapers slightly below. Keuru (Vailala) (II). (Diameter 87×95 , height 52; height of central knobs 5, number of knobs 5×13 .)

Fig. 56 (45) is a characteristic Papuan Gulf club of this group, with prominent knobs, the interspaces between which are painted alternately red and white. The very thick handle (600 mm.) tapers above and below. The grip is roughened by irregular horizontal incisions. Opau (II). (Diameter 111–113, height 63; height of central knobs 12, number of knobs 5×11 .)

An extreme form is seen in Fig. 57 (47). The knobs are oblong in form, and those of the central horizontal row are extremely prominent. The long (1,462 mm.), thick handle tapers above and below. On each side of the stone is a broad band of neat cane plaiting. The handle ends in a point. Keuru (Vailala) (II). (Diameter 131×125 , height 63; central knobs length 30, breadth 23, height 15, number of knobs 5×8 .)

c. Six rows of knobs.

A less depressed type with six rows of moderate-size, oblong knobs is seen in Fig. 58 (48). There are traces of red paint in the grooves. The third row of knobs is the largest. The handle tapers at each end; it is 930 mm. long. On both sides of the stone there is a band of neat cane plaiting, which at the extremity forms a

raised band. The handle below the grip is neatly finished off in a wedge, above which is a bead. Kěřma (II). (Diameter 111, height 75; height of knobs 5-7, number of knobs 6×12 .)

d. Seven rows of knobs.

A very characteristic variety of club (49) is very depressed. While still preserving the peculiar features of the type illustrated by Fig. 57, the first and fifth rows of knobs alone have a knob-like form; the others are more like ridges. The vertical grooves are painted red; the horizontal ones are alternately red or white. The thick handle is 660 mm. long and tapers below. There is neat cane plaiting above and below the stone; it is finished off below in a raised band. The handle terminates in a rounded knob. Opan (II). (Diameter 115, height 42, central knobs length 35, breadth 15, height 15, number of knobs 7×7 .)

Fig. 59 illustrates a somewhat similar specimen in the Australian Museum, Sydney. Number of knobs 7×12 .

Reverting to the more usual type of this group is club Fig. 60 (50). Its general contour is almost biconical. The long (1,180 mm.) rude handle tapers gently below to a blunt point. Keuru (Vailala) (II). (Diameter 105-93, height 71; height of centre knobs 9, number of knobs 7×10 .)

e. Eight rows of knobs.

A depressed club with eight rows of knobs is seen in Fig. 61 (51). The stone is flattened above and below. There are four vertical rows of knobs at the side of large size, and two rows of small, flat knobs on the upper and lower surface. Some of the largest knobs are cut in two vertically to make two knobs. The thick handle (850 mm.) tapers at each end and terminates in a blunt point. Vailala (II). (Average diameter 110, height 50; number of knobs $8 \times 15-24$.)

5. HUMAN-HEAD KNOBBED CLUB.

An unique knobbed club is seen in Fig. 62 (52). It has an irregular oval contour with a greater vertical height at the front end. There are from four to six vertical rows of knobs and sixteen horizontal rows. The rectangular knobs have had their edges worn down by age. Most of the grooves are more or less oblique. At the thicker end is an irregular rude face, the nose of which is merely a groove. The back of the "head" is compressed above and below. The grooves are coloured red and white and black. It is stated that the "face" end is used for hitting with. The thick, rough handle is 625 mm. long, and ends in a point. Kěřma (II). (Diameter 110×98 , height in front 66, behind 53.)

6. OVOID KNOBBED CLUBS.

I know of one or two clubs which in form belong to the ovoid group but which by virtue of their surface markings should be placed among the knobbed clubs.

a. Knobs disposed vertically.

One in the Ballantine collection, Fig. 63 (M), is made of a grey, friable, gritty rock. It is distinctly barrel-shaped, but one side is flattened. Low, square knobs are formed by the shallow incisions. The vertical lines are coloured pink or white, and the horizontal black. The handle (820 mm.) is very thick and tapers below to a blunt point; it suddenly becomes slender above to transfix the stone. Karama (II). (Diameter 71–60, height 83, number of knobs 6–7 \times 15.)

Another ovoid form, Fig. 64 (53), with straightish sides is tessellated with very numerous and very irregular squares and oblongs, separated by shallow grooves. The handle tapers at each end, but it is thickest nearer to the lower end, which terminates abruptly. It is 920 mm. long. Vailala (II). (Diameter 95, height 75, number of knobs 17 \times 32–34.)

b. Knobs disposed in oblique lines.

There is a beautiful type of knobbed ovoid club in which the low knobs are close together and disposed in oblique lines, so that there are, according to the size of the stone, from four to six knobs in a vertical series. The clubs vary in form from rounded to ovoid. The latter bear some resemblance to a fir-cone or pineapple. The handles may end in a point or in a cone. They are sometimes decorated with feathers. Inland from Cloudy Bay (VI). A specimen in the Australian Museum, Sydney, Fig. 65, illustrates this type very well.

c. Barrel-shaped.

Specimens of this group much resemble knobbed ball clubs, but the contour viewed from the side is more barrel-shaped, a typical example in the Australian Museum, Sydney, from the Papuan Gulf is seen in Fig. 66.

A very large rounded club, quite flattened above and below, is illustrated by Fig. 67 (43). The quadrangular knobs are of moderate size, but fairly prominent. They are disposed in from four to five vertical rows. The heavy, thick handle tapers at each end; it is 1,460 mm. long. Keuru (Vailala) (II). (Diameter 122 \times 128, diameter between knobs 108, height 80; height of knobs about 7, number of knobs 4–5 \times 18.)

B. FLANGED KNOBBED CLUBS.

The flanged knobbed clubs form a well-defined group. The flange is sometimes a very prominent feature in the club, or it may be but a narrow strip above and below the band of knobs. As a rule the lower flange has a slightly greater diameter than the upper. The knobs are disposed in a central or equatorial band. They are usually fairly uniform in size and position; typically each is pyramidal in form, rising from a square or oblong base and terminating in a blunt apex. The knobs are evidently formed from large barrel-shaped stone by the cutting out of deep vertical and horizontal V-shaped grooves. Of these the vertical are generally the widest and deepest; thus it results that the knobs usually have

the appearance of being disposed in vertical rows. The central perforation is usually very wide.

The term "pineapple" is often applied to this kind of club by residents in British New Guinea; as I consider the name inappropriate I have discarded it.

1. *One row of knobs.*

I have seen a flanged club with a single row of four very prominent rounded knobs. It might by some be regarded as a star club with four short rays.

Fig. 68 (54) of the Ballantine collection is a club with a large flange round the middle are four discs. The two largest are at the ends; that on one side is small, and that on the other is intermediate in size. It is possible that this is a pickaxe or star club which has been broken and subsequently ground down. The thin, rough handle (1,100 mm.) tapers below and ends in a knob. Eaha (inland from Hogere) (IV). (Diameter 62×60 ; height of flange 70, diameter of flange 48.)

2. *Two rows of knobs.*

This is not a large class, but I have selected four examples which illustrate various points.

A large, fine example, Fig. 69 (27), with large, vertically oblong knobs and deep flanges may be taken as a fair type. The handle is short (870 mm.), stout, and of slightly greater diameter towards the centre. The head end has a plaited cane lashing; the handle end terminates bluntly. Veifaa (Mekeo District) (III). (Height 94, height of band of knobs 44, diameter 87; diameter of upper flange 55, diameter of lower flange 50, diameter of centre 66; height of knobs 10, number of knobs 2×13 .)

Club Fig. 70 (28) has large, prominent knobs, which are squarish in section. The band of knobs is set obliquely with regard to the long axis of the club. In this and the following club, which also comes from Agi, the horizontal V-shaped groove is distinctly the deeper, contrary to the usual rule. The handle is fairly long (1,120 mm.) and tapers slightly at each end. There is fine cane plaiting above the stone. The handle ends bluntly. Agi (Main Range) (IV). (Height 80, width of band of knobs 45, diameter 102, diameter of flange 46, diameter of centre 70; height of knobs 15, number of knobs 2×11 .)

Another club, Fig. 71 (29), has numerous small knobs. It has a long handle (1,140 mm.), which tapers below, but has a blunt end. The plaited cane sheaths above and below the stone are produced into saucer-like expansions, which respectively embrace the upper and the lower flanges. This arrangement is, so far as I am aware, peculiar to clubs coming from the Agi, Wamai, and allied tribes who inhabit the region about the gap in the Main Range below Mount Bellamy; it is also found on the Upper Mambare River (VII) on the other side of the divide. Agi (IV). (Height 54, diameter 80, diameter of flange 44-46, diameter of centre 62; height of knobs 9, number of knobs 2×16 .)

A third club, Fig. 72 (30), is of an oblong oval in horizontal contour. There

are four knobs at each end and four on each side, the former being much the most prominent. The handle is moderately long (870 mm.), thick, and not straight. There is a rather sudden constriction for the grip, which has a blunt end. It is provided above and below the stone with coarsely plaited cane bands. Agi (IV). (Height 57, length 107, breadth 66; height of largest knobs 20, number of knobs 2×8 .)

I have in my possession a club of this group with small flanges and twelve knobs in each series, which I obtained in Torres Straits in 1888; the handle is short and thick.

3. *Three rows of knobs.*

A typical example, Fig. 73 (31), of this class has large teeth, which are not, however, quite uniform in size. The short (710 mm.), thick handle tapers slightly from the stone, but it has a blunt end. There is a little cane plaiting above. Amoamo (Mekeo District) (III). (Height 90, diameter 81, diameter of centre 53; height of knobs 15, number of knobs 3×8 .)

Club Fig. 74 (32) has deep flanges and widely separated prominent knobs, the interspaces between which have been painted red. The polished handle is 1 m. long and tapers below, but does not end in a point; 370 mm. from the head end is a band of four rows of punctures. Baidana (Kabadi) (III). (Height 105, diameter 85, diameter of flange 50, diameter of centre 54; height of knobs 15–20, number of knobs 3×9 .)

One example (33) is characterised by knobs of moderate size and very deep flanges. The rough, irregular handle is 1,110 mm. long; it is of fairly uniform thickness, and ends abruptly. The fine cane plaiting has the typical expansion above and below the stone, and it is decorated with cassowary feathers. Agi (IV). (Height 97, breadth of band of knobs 40, diameter 76, diameter of flange 42–45, diameter of centre 55; height of knobs 10, number of knobs 3×12 .)

4. *Four rows of knobs.*

A magnificent example (34) of this type occurs in the Ballantine collection. The knobs are of large size, and the flanges are well marked. The stout, straight, polished handle is 1 m. in length, and it tapers very gently from the stone, but has a blunt end. There is a cane lashing above and below the stone; the latter is jammed tight by several wooden and bone wedges. There is a string sling for carrying it. Eboa (III). (Height 128, width of band of knobs 82, diameter 103, diameter of upper flange 51, diameter of lower flange 57, diameter of centre 64–74; height of knobs 15, number of knobs 4×10 .)

A specimen in my own collection, Fig. 75, has irregular knobs of moderate size, the flange is very small (4–5 mm.). The polished handle is 825 mm. long and ends in a tapering blunt point; there is a little cane plaiting above and below the stone, and several wedges are inserted in the head end. Mekeo (III). (Height 82, breadth of band of knobs 70, diameter 76, diameter of flange 49; height of knobs 8–13, number of knobs 4×12 .)

5. *Five rows of knobs.*

A still finer club in the Ballantine collection, Fig. 76 (35), has five vertical rows of knobs. The thick handle (970 mm.) tapers from the stone and ends below in a blunt point; above it is sharply pointed. The cane plaiting above and below the stone is plastered with black beeswax, which gives a bevelled appearance to the stone. Baidana (Kabadi) (III). (Height 136, width of band of knobs 100, diameter 98, diameter of upper flange 63, diameter of lower flange 60, diameter of centre 70; height of knobs 12–15, number of knobs 5×13 .)

An example with five rows of small low knobs and deep flanges is found in Fig. 77 (36). The knobs in this specimen are very unequal in size. The short (750 mm.), smooth, straight handle tapers from the stone to a blunted end. There is a little cane plaiting above. Rarai (III). (Height 105, width of band of knobs 56, diameter 70, diameter of upper flange 46, diameter of centre 63; height of knobs about 4, number of knobs 5×19 .)

I have selected club Fig. 78 (37) as a type of a distinct variety which is characterised by numerous small knobs, those of the central row being considerably the largest. In this specimen the flanges are very narrow. The short (620 mm.), thick handle tapers very gently and has a blunt ending. The handle does not project beyond the stone. The latter is tied on by string to the handle in three places. Amoamo (III). (Height 77, width of band of knobs 61, diameter 83, diameter of centre 68; height of knobs 7–9, number of knobs 5×19 .)

6. *Knobs disposed in oblique lines.*

Mr. Ballantine has one or two clubs from near the Main Range, Central District (IV) in which the moderately, or quite, low knobs are disposed obliquely. These “flanged fir-cone clubs” are of beautiful workmanship and are usually carved out of a white or variegated quartzose rock; they are generally mounted on long handles. Fig. 79.

C. WOODEN KNOBBED CLUBS.

Although not coming, strictly speaking, within the scope of this study, I cannot refrain from referring to certain wooden clubs which resemble in form some flanged knobbed clubs.

Fig. 80 (55) is 1,015 mm. long. The height of the head is 130 mm., that of the band of knobs is 100 mm., the diameter of the head is about 62–55 mm., the height of the knobs is 12 mm., and their number is 7×7 . Kěřěma (II).

Fig. 81 (56) is 980 mm. long. The height of the head is 107 mm. and that of the band of knobs 98 mm., the diameter is 67; the height of the knobs is 2–3 mm., and their number 9×18 . There is a lower flange only. Kěřěma (II).

Fig. 82 (57) is 1,080 mm. long. The height of the head is 160 mm. and that of the band of knobs 120 mm., the diameter is 61 mm., the number of the flat knobs is 13×15 . There is a groove in the upper portion of the stick, which leads into a small hole that perforates the head. Kěřěma (II).

VIII. PICKAXE CLUBS.

The clubs of this group fall naturally into two divisions—those with two points and those with four.

1. PICKAXE CLUBS WITH TWO POINTS.

What looks like a primitive kind of "pickaxe club" occurs in the Ballantine collection, Fig. 83 (N). It is an oval stone which appears to be largely a natural stone. It is somewhat flattened above. The broader end is worked into a small projecting blunt point; this end is also of less thickness than the other. It is painted with pink and white bands. The handle (910 mm.) is very rough. Wōmai (II). (Diameter 145×75 , thickness 37.)

A more typical pickaxe club, Fig. 84 (O), is flattened above and below and painted with red lines. The handle (980 mm.) ends in a blunt point, and bark cloth is wound round it above and below the stone. Wōmai (II). (Diameter 187×63 , thickness 33.)

One variety in the collection, Fig. 85 (14), has one side straight, while the other is convex. The ends are flattened and sharp-edged, but they have evidently been reworked, as the stone has there fresh surfaces. The coarse, stout handle (830 mm.) slightly tapers above only. Kērēma (II). (Diameter 203×64 , thickness 40.)

2. PICKAXE CLUBS WITH FOUR POINTS.

a. Unflanged.

Fig. 86 (16), without a flange, measures 149 mm. in length and 77 mm. in breadth. Korohi (IV).

b. Flanged.

A very small specimen in the Ballantine collection, Fig. 87 (15), has two short main points, the laterals being very short. There is a small flange. The handle (610 mm.) has cane plaiting above the stone. It tapers below and ends in a cone. Korohi (Hogere) (IV). (Length 102, breadth 56, height 36.)

The more usual type is flanged and has two long points and two very short laterals. One example, Fig. 88 (17), has the points squarish in section. The handle is long (1,030 mm.) and is provided with fine polygonal canework a long way above and below the stone; it tapers above and below, and there are three beads below the grip. A string handle is also present. Vadiri (Hogere) (IV). (Length 271, breadth 90, height 59.)

A variety, Fig. 89 (18), with moderately long terminals and somewhat shorter laterals approaches the "star club" in form. It has a very deep flange. The smooth handle (930 mm.) tapers above and below to a point. There is polygonal canework above the stone. Vadiri (IV). (Length 197, breadth 140, height 84.)

3. COMPLEX PICKAXE CLUBS.

Two-pointed pickaxe clubs are occasionally found with two small rays or knobs on each side.

IX. STAR CLUBS.

So far as my experience goes there are two classes of star clubs—those with and those without a flange.

A. UNFLANGED STAR CLUBS.

These clubs are characteristic of the Fly River district, and I have seen examples with four to ten points. I believe forms with a small flange also occur in this district. As no Fly River clubs are present in the Ballantine collection, I must leave them out of consideration for the present. Several specimens are figured by D'Albertis (*New Guinea*, II, p. 86), two of which are copied in Figs. 90, 91; the former is quite typical, the latter is more specialised, and from the engraving looks as if a very rudimentary flange was present.

Four Points.—Two clubs in Mer (Murray Islands, Torres Straits) which were formerly used in the sacred Malu ceremonies have four long bluntly pointed rays. In section each ray is biconvex. At Yam Island, one of the Western Group, I obtained the head of a large four-rayed club, made of granite, which was also used in the ancient ceremonies, but in this unique specimen the rays were convex above and slightly concave below in section. The same holds good for the stone as a whole, so that it rests upon its four points in one position and upon its centre in the other, Fig. 92.

B. FLANGED STAR CLUBS.

The typical flanged star clubs are on the whole very similar to one another. The chief variation consists in the number and size of the rays or points of the star. There usually is a well-marked flange, and the rays are generally broad at their base and flattened above and below. Like the "pickaxe clubs," these are usually carefully made and well polished. This type is very characteristic of the Rigo district; but it is also fairly common in the interior of the Central district. I think the rays are liable to be convex on their upper and lower surfaces in the Gulf and Mekeo districts.

1. *Four rays.*

A smallish club, Fig. 93 (19), with short, stout rays and a deep flange, formerly belonged to Gewe, the Chief of Agi. The handle (1,100 mm.) tapers gradually below. There is finely plaited canework on each side of the stone; this expands to form a kind of cup for the latter. The club is further decorated with feathers and coix seeds. Agi (IV). (Diameter 113, height 67.)

2. *Six rays.*

An example, Fig. 94 (20), of this common type has long, broad flat rays. The long (1,265 mm.) handle tapers below. Above the stone is some fine polygonal cane plaiting surmounted by a bunch of parrot feathers; below it are half a dozen turns of a string of human hair, and 215 mm. below the stone is a band of black

and white polygonal plaiting and some string. Duha (IV). (Length 172, breadth 163, height 64.)

Another specimen, Fig. 95 (21), has short, broad, flat rays, one lateral being much shorter than the others. The long (1,270 mm.) handle has plaited cane above and below the stone, and ends in a cone. Wamai (IV). (Length 121, breadth 102, height 59.)

3. *Seven rays.*

In the Ballantine collection is one of this kind with moderately broad rays and a large flange, it came from Wōmai, in the Gulf District (II).

4. *Eight rays.*

This appears to be a common form of star club. Fig. 96 (22) is hafted on a long handle (1,335 mm.), which has cane plaiting, which expands in a saucer-like manner above and below the stone; it is pointed below. Agi (IV). (Diameter 125, height 52.)

5. *Ten rays.*

A ten-rayed club, Fig. 97 (23), is somewhat rare. Deduri (IV).

C. COMPLEX FLANGED STAR CLUBS.

A beautiful type of complex star club has four main rays, and in each angle are two small rays, which lie in a plane above and below that of the main rays.

In the Cambridge Museum is a very fine specimen, Fig. 98, of this type. The long handle (1210) tapers below; there is a deep (86) band of fine, oblique, 8-ribbed plaiting above the stone, and there are some turns of human hair and string below the stone. Probably Central district (IV). (Total diameters of large rays 233, 233, total diameters of small rays 103–107, height, including the deep flange, 89.)

Fig. 99 (25) is a broken example of this type.

In the Ballantine collection is a club, Fig. 100 (26), with an oblong contour, which has four large points corresponding to the angles of an oblong. At one end and at one side there is a small intermediate ray; on the other side there are two small, blunt points not quite in the same plane in the angle of the larger two, but there is nothing in the angle of the other end. The stone is greenish, with lighter inclusions. The long (1,535 mm.) handle tapers below and ends in a small knob. The head end is covered with coarse cane plaiting of a somewhat unusual pattern. Iuari (Hogere) (IV). (Diameter 116 × 87, height 46.)

NOTES ON THE GEOGRAPHICAL DISTRIBUTION OF STONE CLUBS
IN BRITISH NEW GUINEA.

Sir William Macgregor states: "The stone club is also used in the bow-and-arrow country [from the Dutch boundary to the Angabunga, Mekeo District], but it is not common among some of the coast tribes, where stone is

rare.”¹ “The stone club is found practically everywhere on the mainland. Its use is universal on the north-east coast and at all parts of the interior that have been visited. Its place is supplied on the low coral islands of Nada by clubs of ebony-wood, and in the Louisiades by palmwood clubs. It is certainly remarkable that on Murua (Woodlark Islands) the stone club was not used or made, although the best stone for axes and adzes is found and worked there. Clearly the stone club has never been used in our islands at any time.”²

It is also strange that no stone clubs are known to me from the mainland from Cloudy Bay to East Cape. The short description I have given of clubs from the Cloudy Bay District was written mainly from hearsay.

Until very recently the stone clubs were so necessary to the existence of the natives that they would not readily part with them, but as the country becomes more settled and the smaller tribes feel that they are protected by the Government from raids, the natives are willing to trade their stone clubs for tomahawks and scrub knives; this accounts for the circumstance that so many clubs have been collected in British New Guinea during the past few years. As a matter of fact there are now considerable areas of British New Guinea along the coast and among the bush and hill tribes where it is very difficult or even impossible to find any stone clubs at all.

This buying up of the stone clubs is sociologically a benefit to the natives, as stone clubs are always associated in their minds with fighting, whereas tomahawks and scrub knives are used in clearing the scrub when making gardens, but one must not forget that after all these latter implements make very efficient weapons.

It is impossible to tell the age of a Papuan stone club. Many have every indication of being of great age, and consequently there has been plenty of time for them to have become generally distributed throughout the country. The distribution of clubs may have been partly effected by means of barter, for many of the tribes are keen traders, but probably most of the clubs were disseminated during the frequent raids. It is well known that a tribe or even a confederation of tribes will travel considerable distances when man-hunting, and it is only natural that such valuable weapons as stone clubs should be retained as the spoils of war.

We are in ignorance as to where the clubs are made or how this is accomplished. It is only recently that the process of making the perforation has been described by Sir William Macgregor. I may add that I have myself seen Gewe, the chief of Agi, pounding away at an unfinished stone club in the manner described by Sir William.

In a despatch, dated 15th November, 1895, reporting the result of an expedition to the Mambare River, Sir William Macgregor writes as follows:—

“In this village [name unknown, situated on the Mambare River] there was lying on the ground a flat piece of basalt stone, apparently picked out of the river,

¹ *British New Guinea: Country and People*. London. John Murray. 1897. p. 61.

² *loc. cit.*, p. 60.

already of the requisite thickness for a disc stone club), smooth on both sides, and ellipsoid in outline: it was now being bored for the reception of the handle. Each side was already pierced half an inch deep, the little pit being about an inch and a half wide at the surface and tapering to a point at the deepest part. Evidently it was being bored by a hard stone with sharp angles, in the same way as the natives bore large holes on thick slabs of shell with splinters of quartz on Duau and elsewhere." (Appendix D, p. 13, *Ann. Rep. Brit. New Guinea*, from 1st July, 1895, to 30th June, 1896. Brisbane, 1897.)

In the following Annual Report (1st July, 1896, to 30th June, 1897. Brisbane, 1898. Appendix C, p. 4) Sir William writes:—"Here, for the first time, I had an opportunity of seeing how natives make the hole that receives the handle in a stone club. Some time ago I found one they were in the act of boring, but they had taken away the borer. That same specimen, with the borer, is now in my possession. They select a number of small stones of the size and shape of a rifle bullet. They chip a hole through the stone club by light blows from the point of the small stone. It is surprising what progress can be made in boring the hole by this very simple contrivance."

About twenty odd miles up the Mambare River, Commandant Butterworth bought what he took to be two stone clubs; "but on close inspection," he says, "I found them to be made of pottery, which would prove that the natives are very smart rogues" (p. 19, *Ann. Rep. Brit. New Guinea*, 1895-96. Brisbane, 1897). It does not follow because a stone club is imitated in pottery that there is any intention to deceive. It is a pity that Captain Butterworth did not state the kind of club that was copied.

It is pretty evident that the clubs are made in the interior. Suitable stone is rarely found near the coast, and some, at least, of the coast people are practically little more than pure fishermen. The next question is, Do the men of a given district manufacture a particular kind of stone club, or do they make any kind indifferently?

I am not able to give final answers to these questions; but by classifying a large collection, such as Mr. Ballantine's, who has over 300 clubs, one finds that it is possible to map out areas of distribution for many types of clubs, and we may presume that these clubs were manufactured in, more or less, that district whence they were obtained. Disc-shaped clubs are obtained pretty well from all over British New Guinea, and hence we may conclude that these are made everywhere; but even amongst these there are certain types that appear to have a restricted distribution.

I regret that my limited knowledge does not allow me to describe the lithological characters of the stones employed. Some interesting facts will doubtless be elicited when these are studied by an expert.

The workmanship of the club is also an important factor, as is also the character of the handle. I have described the handles of the clubs fairly thoroughly. A handle often forms an important clue to a club of doubtful locality,

provided that the handle is original. It is necessary to emphasise the last statement, as I am sorry to say that to my own knowledge stone heads from one district have been fitted with handles by natives of an entirely different district, and in consequence all clubs with handles that are evidently newly made must in future be regarded with suspicion. Of course it is perfectly legitimate for a collector to get natives to haft old stone heads that have been procured from that particular district, for in every case the handles of stone clubs must be much newer than the stone head, and probably most of them have had many handles in the course of their existence. The chief points to notice in a handle are the length, the character of the cane plaiting at the head end, and the manner in which the end of the grip is finished off.

I find that some half a dozen areas of distribution of stone clubs can be demarcated with a fair degree of certitude. These I take in geographical order, proceeding from west to east.

I. THE WESTERN DISTRICT.

This district includes the Fly River Valley and the mainland of British New Guinea facing Torres Straits. The latter is known as Daudai or Dudi which may be taken as the country lying between the Mai Kussa and Fly Rivers. I cannot assign any eastern limit to the district.

Flat or biconvex disc clubs are very common. They are often somewhat irregular in outline, but are apparently meant to be circular. Unflanged star clubs are also characteristic. Sometimes they are of rather rude workmanship; others are well made, with a polished surface. The number of rays varies from four to about a dozen; the latter variety rather merges into the class of disc-shaped clubs with notched edges, examples of which also occur in this district. Ovoid clubs have been obtained from the Fly River.

The handles are usually thick, often of stout ratan, and either are cut off square below the grip or taper below to more or less of a blunt point. A string loop is generally present.

I believe that most of the clubs from Torres Straits were imported from the Fly River District and Daudai; at all events, they are so similar that they must be regarded as belonging to the same district. I have collected flat and biconvex wooden disc clubs in Torres Straits, and a small unflanged seven-rayed wooden star club. The weapons of the Torres Straits islanders will, however, be dealt with on a subsequent occasion.

I have no information, at present, respecting the stone clubs from Daudai westwards to Netherlands New Guinea.

Reference should here be made to the disc and star stone clubs "collected" by D'Alberty in a village about 350 miles up the Fly River. They are surmounted by perforated ornamental slabs wonderfully carved in hard stone.¹ The artists who

¹ Cf. D'Alberty, *New Guinea: What I did and what I saw*, II, pp. 136-137; and Haddon, *Decorative Art of British New Guinea*, p. 78.

made these objects were probably the most skilled workers in stone of whom we have any record in this quarter of the globe; indeed I do not recall any stone work of its kind in any part of the world or at any period.

II. THE GULF DISTRICT.

I cannot at present determine the westerly limit of this district. No specimen of stone club that I have studied comes from farther west than Orokolo. The easterly limit extends to about Cape Possession. The following is a list of villages proceeding in the same direction:—Maipua, Orokolo, Vailala, Keuru, Kěřēma, Lolobada, Siro, Wōmai, Karama, Oraruru, Moveave, Toaripi ("Motumotu"), Lese, Jokea, Kaima (Waikapu or Oiabu).

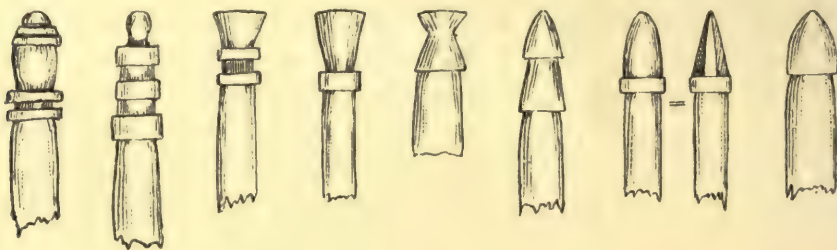
Very characteristic of this district are clubs made of natural stones or of stones which have been slightly worked. These may be plain (Figs. 1-3, 5, 6) or notched (Figs. 4, 7), or be scored by shallow (Fig. 9) or deep (Figs. 11, 8) grooves in a rectangular manner. The latter pass into the unflanged knobbed clubs (Figs. 66-74), which are equally characteristic of the district. Disc clubs are common; they are often of large size and usually oval in contour. The edges may be simply notched (Figs. 46, 47), or the indentations may be so deep as to leave prominent knobs (Figs. 49, 50). The latter clubs might almost be classed as star clubs. There are also intermediate grades between flat clubs with simple notched edges to characteristic depressed unflanged knobbed clubs; for example, the notches may be far apart (about nine in number) and each may be continued as a converging radial groove along each face of the disc, also each radius may be scored by two or three concentric grooves.

Hitherto the natural stone clubs (Figs. 1-4), the unflanged knobbed clubs, (Figs. 66-76), the triangular (Figs. 39, 40), rectangular, and other peculiarly shaped disc clubs (Figs. 33-38), and the large two-pointed pickaxe clubs (Figs. 12-14) have been obtained only from this district. Flattened ball clubs (Fig. 18) are not rare. A few unpolished ovoid clubs have been collected in this district. All flanged clubs are rare. A few flanged star and knobbed clubs have been obtained; but the flanged disc clubs (Fig. 44) are only found here. The same applies to the wooden knobbed clubs (Figs. 28-30).

The heads are often made of a gritty rock, so that they have a worn appearance and do not take a polish. It is partly this circumstance that gives the Gulf clubs such a rude appearance. But independently of this, the workmanship on the whole is not so careful as in other districts, and very often it is extremely rough. Many of the stones are painted with red and white pigments (Figs. 3, 4, 7-11, 46, 47, 69, 75). The red may be a dull red ochre, but frequently it is a distinct and pretty pink which looks as if it had some white mixed with it. The pink pigment appears to be most frequently employed about Wōmai, Karama, and Kěřēma.

The handles are usually very rude and often crooked. It looks as if these people bestowed less care upon their clubs than in other districts and regarded

them almost solely from the point of view of utility. The handles are generally short and very thick; frequently they taper at both ends. A certain number of clubs have very long handles; probably these characterise some bush tribe. The stone is sometimes simply thrust on to the handle (Figs. 1, 2, 18, 61, 76); but usually there is some coarse cane plaiting which serves to fix the stone. In a few cases (Figs. 3, 4, 14) bark cloth is used for this purpose. Sometimes the cane plaiting is neatly executed, and in a few clubs it is finished off by a raised band (Figs. 44, 64). Occasionally (Figs. 6, 68) the head of the club is decorated with cassowary feathers. The grip end is rarely squared; more frequently it is roughly chipped to a blunt point; sometimes it tapers gradually to a sharp point. Characteristic of this district is the carving of the end of the grip into one or more beads.



A few have characteristic simple Gulf patterns incised in a band a short distance below the head (Fig. 32) or below the grip.

III. THE MEKEO DISTRICT.

In employing the designation of the Mekeo District, I include the drainage system of the Angabunga ("St. Joseph River") and the immediately adjacent country, more especially to the south. Perhaps the basins of the Aroa (that is, the Kabadi country) and of the Vanapa should also be included.

The characteristic stone club of this district is the flanged knobbed club (Figs. 52, 56-60). Disc clubs (Fig. 31) are very rare.

The handles are usually of moderate length. The cane plaiting is finer and neater than that of the Gulf District. Often there is a string loop. Usually the grip ends in a blunt point.

IV. THE CENTRAL DISTRICT.

This district includes the large drainage system of the Laroki and its affluents, and comprises all the hill tribes that live between the Astrolabe Range and the Main Range. The following is a list of most of the tribes and villages from which clubs have been obtained:—Gasiri, Taburi, Hogere ("Sogere"), Iaritari, Havere, Vadiri, Korohi, Favere, Adori, Maiari, Vafare, Seremina, Iovi, Duha, Maraka, Ubere, Eaha, Wamai, Boura, Agi.

The most characteristic clubs from this district are the highly finished ovoid clubs (Figs. 19-27). This group appears to be confined to the district, although unpolished ovoid clubs have been obtained in the Gulf and Fly River Districts.

Disc clubs (Figs. 41-43) are common; ball clubs (Figs. 16-17) less so. Characteristic of the interior of this district are "flanged fir-cone clubs." Flanged knobbed clubs (Figs. 53-55) occur near the Main Range, and flanged star clubs (Figs. 83-87) are not common. Four-pointed pickaxe clubs (Figs. 79-82) are found here.

The ovoid or "emu-egg" clubs are mounted on very long handles, but the disc clubs have short handles. The cane plaiting improves, as a rule, the nearer the Main Range is approached. In the region about Agi, Wamai, Eaha, the plaiting expands in a saucer-like manner to embrace the stone above and below (Figs. 54, 83). This peculiarity is not met with south of Vafare. It occurs again on the other side of the Main Range on the Mambare River. The head end of the clubs is sometimes decorated with feathers, generally those of parrots (Figs. 41, 63, 83, 84, 87, 88). This is more frequent among the tribes nearer to the coast, and less so towards the Main Range.

In the majority of clubs the grip ends in a longer or shorter cone.

V. RIGO DISTRICT.

The fertile drainage system of the Vanigela (Kemp-Welch River) includes the Rigo administrative district.

The characteristic clubs of this district are the various forms of the flanged star group. These clubs are beautifully made and well polished. Four-pointed pickaxe clubs also occur here. Discs are also common.

The clubs are well mounted, and the handles generally terminate below in blunt points.

VI. CLOUDY BAY DISTRICT.

This district is inhabited by the Dedele, etc.

Flanged star and knobbed clubs are found here, but they are said usually to be of smaller size than in the foregoing districts. I believe that the ovoid clubs with closely set low knobs disposed in oblique lines, so that there are from four to eight in a vertical direction, "fir-cone club," occur in this district. Flattened flanged clubs with a double notched edge are also characteristic.

The clubs are well mounted, the cane plaiting is fine, and the clubs are often decorated with feathers.

VII. NORTH-EAST DISTRICT.

The few stone clubs that I have seen from Kumusi, Kome, and other localities on the north-east coast of British New Guinea do not appear to differ in any essential point from those obtained from the Mambare River. A sufficient number of specimens have been obtained from the latter region to warrant the following general account:—

Apparently the most common stone club is the flanged knobbed form.

Usually the flange is deep. The majority appear to have three knobs in the vertical series and from ten to fourteen in the horizontal series. There is no difference between these club heads and those from the Mekeo District. Ovoid knobbed clubs of the "fir-cone" variety, I believe, also occur. Perhaps the most common type of disc is the thin flattened form; the flanged flattened disc is also found, though rarely.

The characteristic feature of the Mambare club is to be found in the handle. The average length of ten handles taken at random is 1,150 mm., the extremes being 877 mm. to 1,690 mm. The stone is fixed some distance from the end of the handle, and this space, which averages about 75 mm., is covered with fine cane plaiting. There is a similar, usually broader, plaited band below the stone, the average length of which is at least 85 mm., and there is generally an additional binding of sinnet, etc. The plaiting may expand above and below the stone into a cup, which fits over the ends of the flanged knobbed clubs, as previously described in clubs on the other side of the Main Range near the Gap, below Mount Bellamy. The free end of the handle is usually decorated with a bunch of white or coloured parrots' feathers. Similar feathers are often fastened to the inferior border of the lower band of plaiting. Not infrequently the fur of the cuscus is employed in decorating the clubs. Occasionally there is a carved band with a zigzag design below the lower plaiting. The grip usually ends off in a long pointed cone, above which there may be a bead and a further decoration of feathers.



Description of Plates XIX, XX, XXI.

- I. Natural stone clubs, or clubs with a slight amount of working, 1, 2, 3, 4 (Gulf).
- II. Ring clubs.
 1. Unflanged : 5, 7 (Gulf), 6 (Central).
 2. Flanged : 8 (Gulf ?).
- III. Ball clubs.
 1. Unflanged : 11 (Gulf), 9, 10, 12, 13 (Central).
 2. Flanged : 14 (Central).
- IV. Ovoid clubs.
 1. Short and thick : 15 (Central).
 2. Long and tapering : 16 (Central).
 3. Cylindrical : 17 (Central).
 4. Barrel-shaped : 18 (Central).
 5. With an equatorial swelling : 19, 20 (Central).

V. Disc clubs.

1. Oval ; A. Thick : 21 (Mekeo), 22, 23, 24 (Gulf). B. Thin : 25 (Central), 26 (Gulf).
2. Various shapes ; A. Oblong : 27 (Gulf). B. Triangular : 28, 29 (Gulf). C. Diamond : 30 (Gulf?). D. Lakatoi : 31 (Gulf).
3. Circular : A. Biconvex, thick : 32 (Torres Straits). B. Thin : 33 (Central). C. Flattened, thin : 34, 35 (Central). D. Flattened, thin and flanged : 36 (Gulf). E. Undulating : 37 (Gulf).

VI. Flat clubs with notched edges.

1. With a single row of notches, no flange : 38, 39, 40, 41, 42 (Gulf).
2. Two rows of notches ; A. Unflanged : 43 (Gulf). B. Flanged : 44 (Central).

VII. Knobbed clubs.

- A. Unflanged ; 1. Natural stones, or with a small amount of working : 45, 46, 47, 48 (Gulf). 2. Knobbed ring clubs ; *a.* One row of knobs : 49, 50 (Gulf). *b.* Three rows of knobs : 51 (Central). 3. Knobbed ball clubs : 52, 53 (Gulf). 4. Depressed knobbed clubs ; *a.* Four rows : 54 (Gulf). *b.* Five rows : 55, 56, 57 (Gulf). *c.* Six rows : 58 (Gulf). *d.* Seven rows : 59, 60 (Gulf). *e.* Eight rows : 61 (Gulf). 5. Human-head club : 62 (Gulf). 6. Ovoid ; *a.* Knobs disposed vertically : 63, 64 (Gulf). *b.* Knobs disposed in oblique lines : 65 (Cloudy Bay?) *c.* Barrel-shaped : 66, 67 (Gulf).
- B. Flanged ; 1. One row of knobs : 68 (Central). 2. Two rows : 69 (Mekeo), 70, 71 72 (Central). 3. Three rows : 73, 74 (Mekeo). 4. Four rows : 75 (Mekeo) 5. Five rows : 76, 77, 78 (Mekeo). 6. Knobs disposed in oblique lines : 79 (Central).
- C. Wooden knobbed clubs : 80, 81, 82 (Gulf).

VIII. Pickaxe clubs.

1. Pickaxe clubs with two points : 83, 84, 85 (Gulf). 2. Clubs with four points ; A. Unflanged : 86 ; B. Flanged : 87, 88, 89 (Central). 3. Complex.

IX. Star clubs.

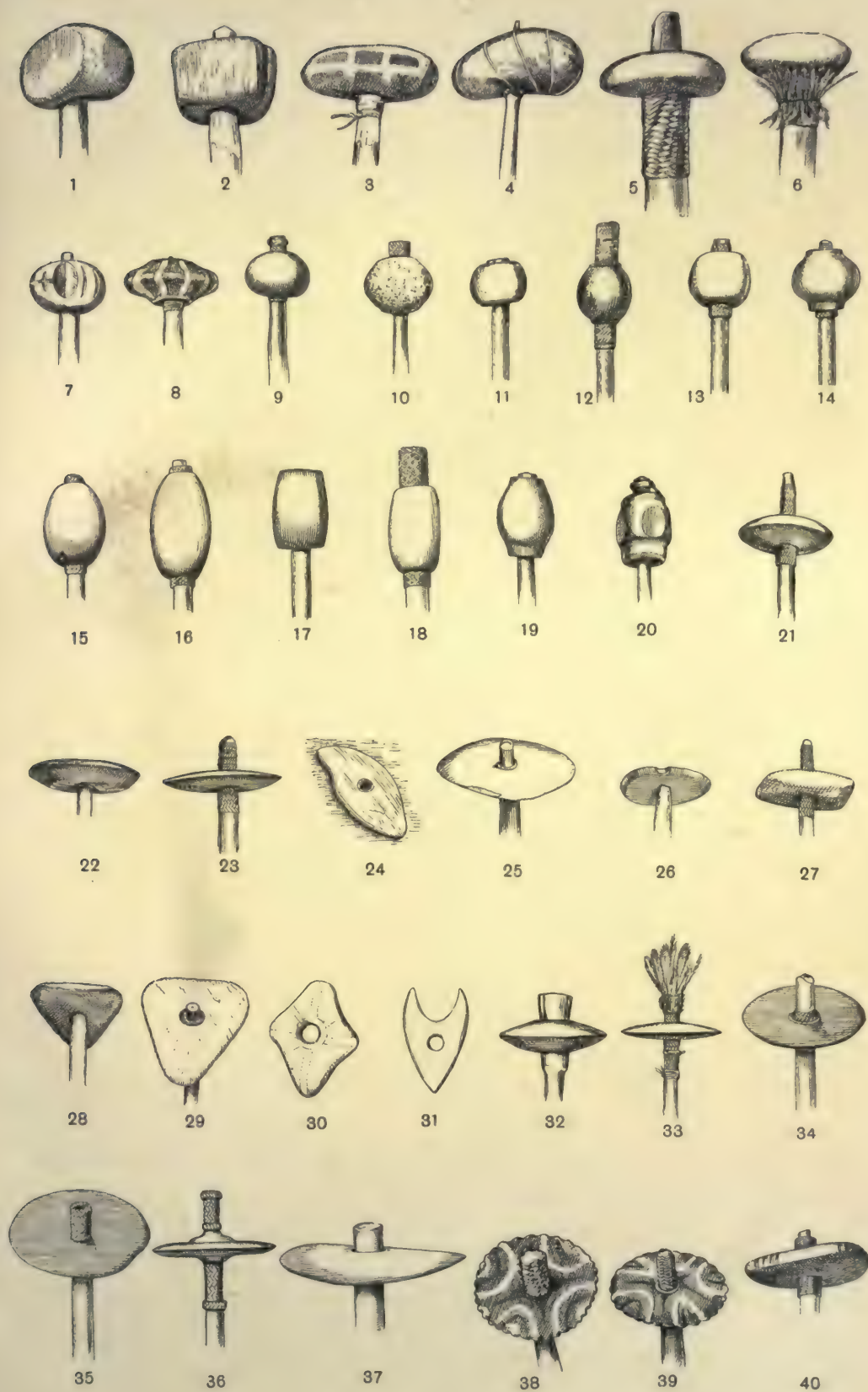
- A. Unflanged : 90, 91 (Fly River), 92 (Torres Straits).
- B. Flanged ; 1. Four rays : 93 (Central). 2. Six rays : 94, 95 (Central). 3. Seven rays. 4. Eight rays : 96 (Central). 5. Ten rays : 97 (Central).
- C. Complex flanged clubs : 98 (Central?), 99, 100 (Central).

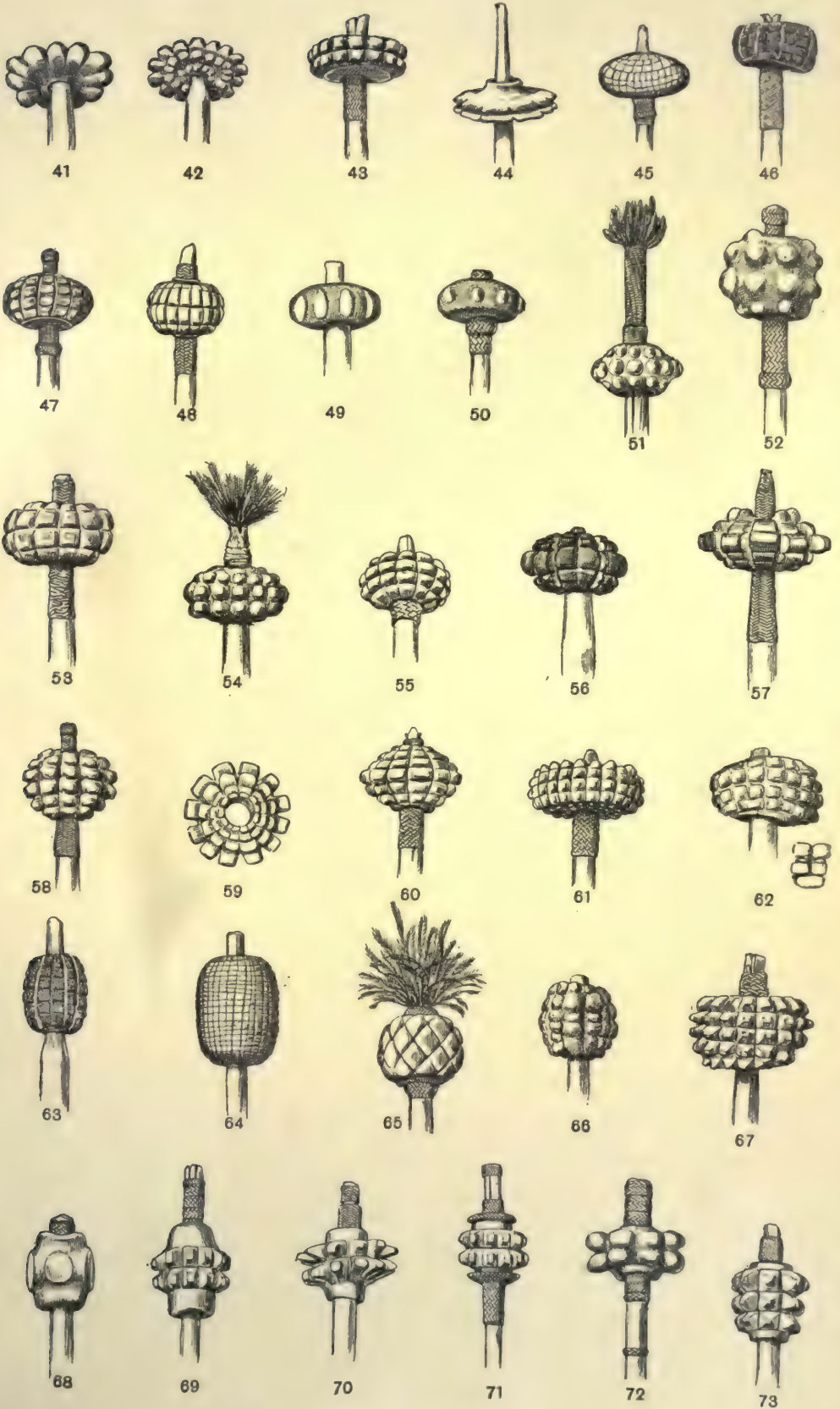
Description of Plate XXII.

Typical stone clubs from seven districts of British New Guinea—

1. Thick, biconvex, circular disc club ; Yam Island, Torres Straits. Cambridge Museum.
2. Unflanged, flat club with two rows of notches at the edge ; Kupava, Evaora, Romilly Sound, Papuan Gulf. Cambridge Museum.
3. Flanged knobbed club with four rows of knobs ; Mekeo. Cambridge Museum.
4. Short, thick ovoid club ; Gasiri, Central District. Cambridge Museum, presented by the Hon. D. Ballantine.
5. Flanged, knobbed club with three rows of knobs ; Mambare (North-East). Cambridge Museum, presented by Sir William Macgregor.
6. Unflanged, knobbed club with knobs disposed in oblique lines ; Inland, back of Cloudy Bay (?). Australian Museum, Sydney.
7. Six-rayed, flanged star club ; Rigo.

All the clubs are drawn to the same scale of one-seventh.







74



75



76



77



78



79



80



81



82



83



84



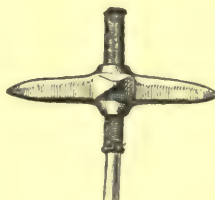
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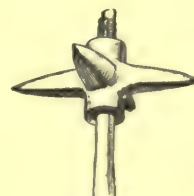
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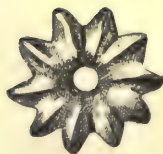
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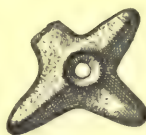
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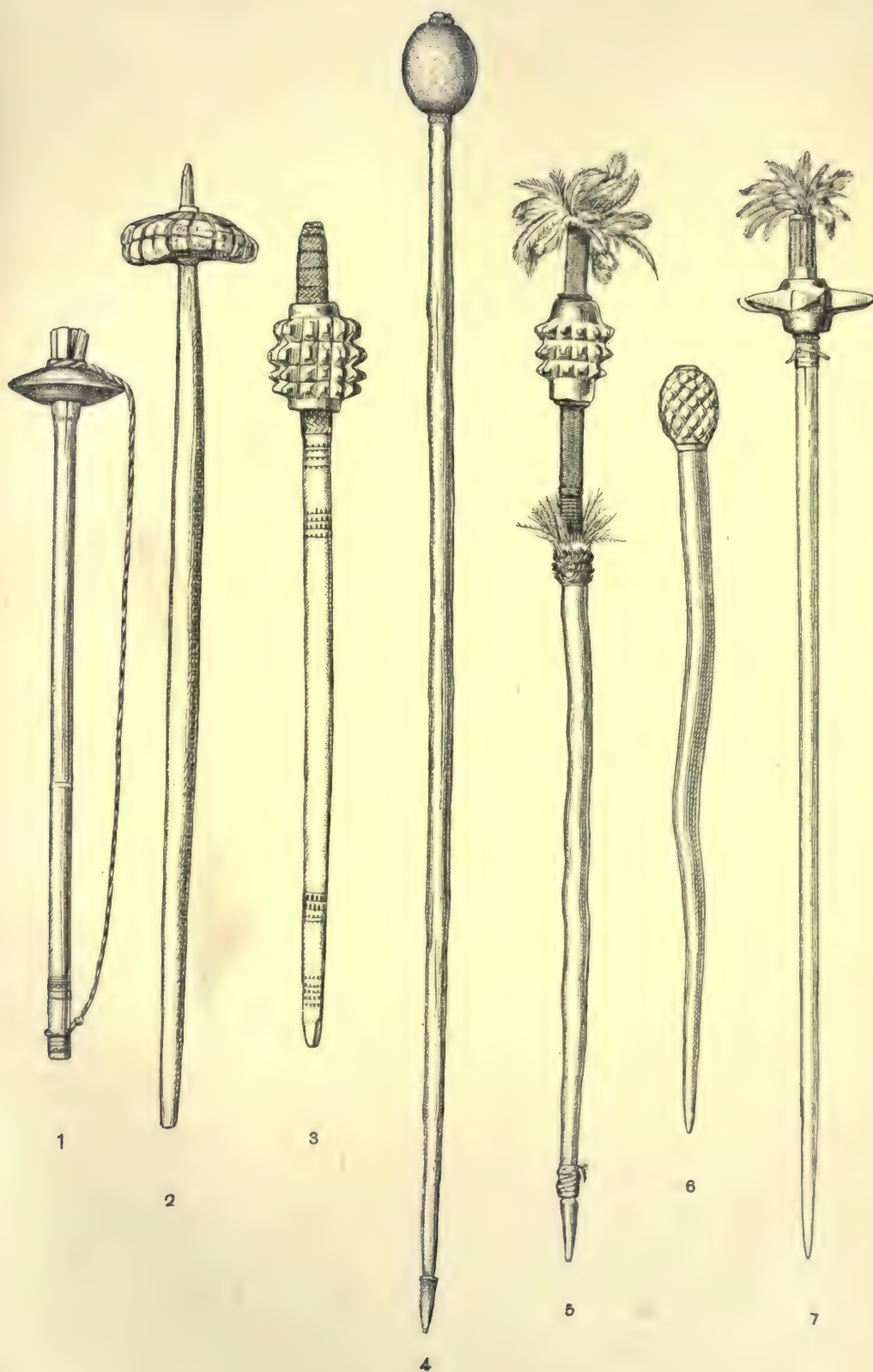


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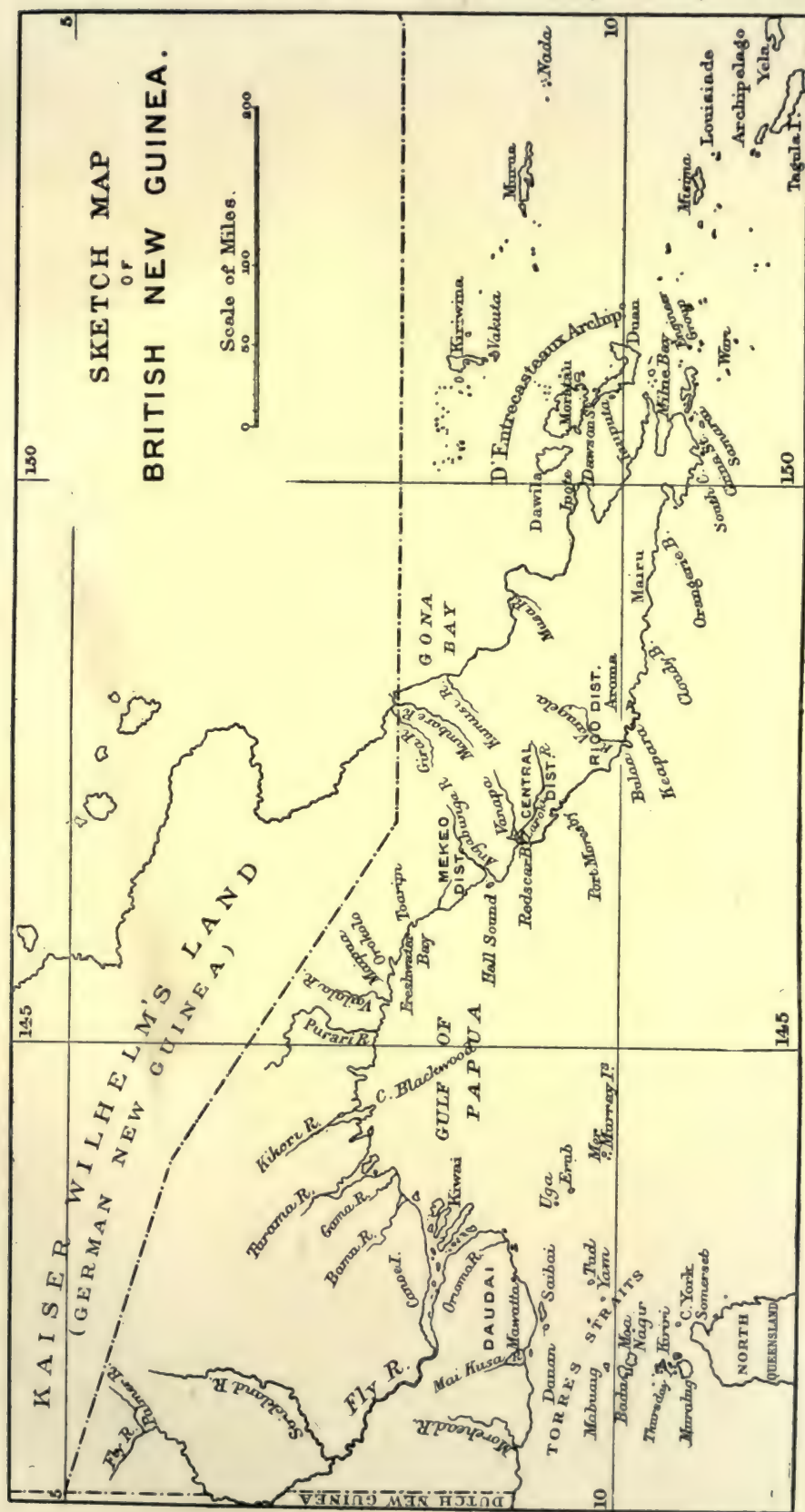


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TYPICAL STONE CLUBS FROM BRITISH NEW GUINEA



A PRIMITIVE FIGURINE FROM ADALIA.

BY JOHN L. MYRES, M.A., F.S.A.

[PRESENTED JUNE 12TH, 1900. WITH PLATE XXIV.]

THE little figure which is represented, from three points of view, in Plate XXIV, was acquired by Mr. H. Swainson Cowper, F.S.A., at Adalia in Asia Minor in the course of the year 1900; was exhibited on his behalf at a meeting of the Anthropological Institute on the 12th June, 1900; and has since been presented by him to the Ethnographical Department of the British Museum. The negatives from which the representations in the plate were made are numbered respectively 2,101; 2,102; 2,103 in the inventory of the Anthropological Photographs Committee of the British Association for the Advancement of Science.

The figure measures only 50 mm. (2 in.) in height, so that the representations given here are very nearly of full size. It is composed of a clay which closely resembles that of the earliest pottery at Hissarlik,¹ being black throughout, smooth on the worked surface, and rather gritty or granular in fracture.

The type is that of a female figure, represented in a sitting, or rather in a squatting posture. The general form is given, in primitive fashion, simply by modelling the clay with the fingers; while the limbs appear to have been added (as is often the case with the earliest Cypriote figurines)² with separate pellets of clay. But, of these, that which represents the right foot (to the left in the front view) has never been thoroughly incorporated with the trunk; and either has fallen off, or rather, as will appear later, has perhaps been detached intentionally, to carry out a change in the purpose of the artist.

The minor features are indicated on the surface of the clay by incised lines and punctured dots, some of which still retain traces of the chalky filling which is so common on the earliest incised pottery of the Mediterranean area. On the flat top of the head is a rude cross, which denotes perhaps hair, perhaps some form of head-dress. On the face there appear only a fringe of short strokes (for the hair of the forehead) and two enormous eyes, which, meeting as they do in the centre of the face, produce in front view the effect of a sort of beak, though the anterior surface of the head is seen in profile to be flat. Nose and mouth, on the contrary, are wanting, if we except one careless puncture (which may even be accidental) below the meeting-point of the eyes. Round the neck are represented two collars with numerous short pendants: the lower one has also a disc-like central pendant in front. The chevron-form which these collars assume, both in

¹ Schliemann, *Ilios*, pp. 218-220.

² Myres and Obnefalsch-Richter, *Cyprus Museum Catalogue* (Oxford, 1899), p. 27, and Nos. 463, 5402, 5555.

front and behind, is closely parallel to that of the collars on the clay figure from Hissarlik,¹ and the mode of representing the face is obviously closely analogous to that of the "owl-faced" members of the same group of figures.²

On the arms and hands, which are pressed closely upon the breasts, the fingers are indicated, but no thumbs; at the wrists there are two transverse lines which may represent bracelets, but more probably simply indicate the wrist-joint; and on the forearm there are three longitudinal incisions. The latter might at first sight be taken for drapery, but more probably stand for tattooing or paint; for the indication of the navel and other details on the abdomen show that the figure is conceived by the artist as nude; the navel, in fact, being markedly emphasised by a ring of eight dots round its central point.

The legs, like the arms, are much curtailed, and are represented folded upon the abdomen. On the left foot, the toes and ankle-joint are shown by incised lines like those on the hands; but with this addition, that the space between the two transverse lines is sparsely filled with punctured dots: similar punctured ornamentation may be seen on another of the clay figures from Hissarlik.³

The right foot, as has been noted already, is missing now, but its place appears to be supplied by a curious tail-like feature (*q.v.*) in rear of the left leg, of which portions can be traced in each of the three photographs.



It presents, unmistakably, the outline of the sole of a foot, represented as protruding, in a squatting position, from under the left thigh; the outline of the sole being punctuated, like the ankle of the left leg, with numerous dots, to distinguish it as a solid object, and to detach it from the background. The intention of the artist clearly is, to represent the figure seated on the ground with the legs crossed: the left leg comes across the figure in front, while the right, which thus lies behind it, is tucked away beneath the body, so that only the foot emerges, in the position in which it is shown, beneath the left hip of the figure. The scar, meanwhile, which has been already noted in the place where the right leg should be, suggests further that the artist began by attempting to represent both feet in front symmetrically; but afterwards changed his mind, removed the right leg, and added the right foot in its present position. It is, however, not impossible that the missing portion may have been unincised, and intended rather to represent the projecting knee of the right leg: and if so, we must assume that it has been detached accidentally.

This half sitting, half kneeling attitude, not unlike the "kneeling position" of the modern rifleman, adds much to the interest of the figure; for, with some variation in detail, it is characteristic of a group of figures, which is widely distributed in the Eastern Mediterranean both in space and time: in some of the later examples, moreover, and perhaps in the earlier also, it may even be suspected to have a definite ritual significance. The best known, and most characteristic

¹ *Ilios*, Fig. 205.

² *Ilios*, Figs. 191-220.

³ Perrot Chipiez, *Histoire de l'Art dans l'Antiquité*, VI, Fig. 337. For the significance of punctured ornament, see p. 255 below.

examples of this class, are the figures of stone and clay from the "megalithic" ruins of Hagiar Kim in Malta, now in the museum of Valletta,¹ which are female, like the figure from Adalia, and are seated in a variety of half kneeling attitudes, with one leg crossed in front, and the other drawn away to one side. In the Maltese figures, however, the right foot is usually thrust outwards, instead of being drawn under the body. Other examples carry the same type of figure from end to end of the Eastern basin of the Mediterranean. From the Ægean come the grossly modelled figures found in the Kabirie sanctuary in Samothrace, and from mainland Greece a primitive figure of Pentelic marble, found a little north of Athens, and acquired by the Ashmolean Museum. In the latter instance, it is true, the artist has hit upon another rendering of the legs, which are folded one above the other across the front of the body, much as the arms commonly are in the cognate marble figures from the Cyclades.²

Further, in view of the owl-like visage, and pentagonal trunk, of this figure from Adalia, it becomes highly probable that those truncated and "owl-faced" images of marble or limestone,³ which were found in such numbers in the lower strata of Hissarlik, and to which repeated allusions has been made already, are only still more inexpert attempts to reproduce the same squatting type; at all events, the well known leaden figure⁴ shows very well that a "Trojan" artist had no difficulty in modelling a full-length figure, if he wished to do so; and in the Cyclades too, the "violin-shaped" type of marble figure,⁵ of very rounded outline, and devoid of legs, co-exists with a whole class of well modelled full-length figures, and may very likely represent a squatting type like that of the Attic figure.

Further still, it can hardly be accidental that the Maltese, the Samothracian and the Attic figures agree with that from Adalia in an abnormal steatopygia, which recurs in some of the full-length figures from the Cyclades,⁶ has given rise to a number of ethnological speculations. In the case of the figure from Adalia, indeed, the steatopygia is by no means so pronounced, and is further concealed by the rudeness of the workmanship, the flat standing-base of the figure, and the abbreviated treatment of the lower limbs. But no one, I think, can fail to observe the marked looseness and grossness of the contours of the figure; while the profile-view in particular shows a corresponding protrusion of the abdomen, between the hands and the feet, which is very carefully modelled, and certainly intentional.

Coming now to more easterly, and at the same time to less primitive figures,

¹ See Caruana, *Report on the Ruins of Hagiar Kim*; Perrot Chipiez, *Histoire de l'Art*, iii, Figs. 230, 231; and s.v. *Malta*, in the forthcoming list of the Anthropological Photographs Committee.

² Blinkenberg, *Antiquités Prémycéniennes*, Fig. 1-3. Evans, *Cretan Pictographs*, Appendix pp. 126, 128.

³ *Ilios*, Figs. 191-220.

⁴ *Ilios*, Fig. 226.

⁵ Blinkenberg, *l.c.*, Fig. 4; and unpublished specimens in the Ashmolean Museum.

⁶ Perrot Chipiez, *l.c.*, vi, Fig. 333 (from Amorgos), 334 (from Sparta).

it is tempting to compare the attitude of the so-called "Temple-boys"¹ which are among the commonest votive sculptures on the sanctuary-sites of Cyprus, and occur occasionally also in Cypriote tombs. The extant examples of this type are indeed one and all later than the fifth century B.C.; but they certainly perpetuate a ceremonial posture, and this may very well have been traditional, and of far greater antiquity than these late instances of it. In these fully modelled figures the attitude itself is more clearly expressed, the figure sits on one foot, usually the left, with the other foot in front, the weight of the body being usually borne partly on the left hand, while the right hand grasps a bird or an incense-box. It is characteristic also of this group, that, though the figure is almost always clothed, the garment is drawn up so as to expose the groin—the original type was therefore essentially nude;—and also that the figure wears one or more necklaces, heavily loaded with pendant-charms. The large majority of the Cypriote figures are male; but female examples are found.²

It is not clear at present what, if any, is the significance of the peculiar attitude under discussion; and the discovery in the Mycenæan palace of Knossos in Crete, of *genre* fresco-scenes in which the female figures are seated in an attitude very similar to that of the Maltese figures, warns us not to lay too much stress on a posture which may have been common in every-day life. At the same time, the posture was not in common use either in Greece, or in Asia Minor, or in Cyprus (except for these "Temple-boys"), during the Hellenic period³; its retention, in the case of the "Temple-boys," as a ceremonial attitude points to it as a survival from an earlier phase of culture; the Mycenæan women in the Cretan fresco are themselves seated in the courtyard of a building which appears to be a Mycenæan temple; and both the Samothracian and the Maltese examples, widely separated as they are in space, and perhaps also in time, agree in having been found, the former in an undoubted sanctuary, which persisted as such into Hellenic times, the latter in a building which like its greater fellow, the "Giganteja" of Gozo, bears the strongest marks of having been the focus of a cult of some kind.

Further, as Mr. Evans has recently shown,⁴ the Maltese, the Cretan, and the Cypriote cults in question are of the same "baetylic" type; centring, that is, round the worship of a pillar, of stone or wood, as the repository of the divine presence: so that the probability is increased, that the similar attitude assumed by votive figures in each case may be a votive or ceremonial attitude.

¹ See Myres and Ohnefalsch-Richter, *Cyprus Museum Catalogue*, Nos. 3153ff, 5112ff, 5201ff, 5576; and Ohnefalsch-Richter, *Kypros*, Pl. xcii. There are several examples also in the Cypriote Room of the British Museum (Nos. 230, 273, 274), in the *Salle des Origines* of the Louvre (uncatalogued) and in the Cesnola collection in the Metropolitan Museum of New York.

² *E.g.*, *Cyprus Museum Catalogue*, No. 3157.

³ In Greece it is an attitude of fabulous or orgiastic figures such as satyrs (as on the coins of the Sicilian Naxos, Gardner, *Types of Greek Coins*, Pl. ii, 20, cf. coins of Thasos, Head, *Historia Numorum*, p. 228), and in this case also probably a traditional and perhaps a ritual pose.

⁴ In a paper which was read before the Hellenic Society (November 1st, 1900), and has appeared in the *Journal of Hellenic Studies*, xxi, pp. 99-204.

In the case of the figure from Adalia, however, it has not been possible to discover whether it was found in any sanctuary, and for the present it remains an isolated find.

Isolated as it is, however, it contributes two other important data to our knowledge. Hitherto the black carbonised clay-fabric, which is characteristic of the earliest settlement at Hissarlik, though it has been traced by the researches of Dr. A. Koerte up the valley of the Sangarios River, has not been identified further to the south and east. In Galatia and Kappadokia, and even in parts of Phrygia itself, in fact, the red-faced hematitic clay-fabric which comes up from the direction of Cyprus and the Syrian coast, supervenes directly upon the primitive unfaced wares; whereas in the Hellespontine region we find it supervening upon the black-ware. The discovery, therefore, of so fine a specimen of the black-ware so far south as the neighbourhood of Adalia, is of considerable importance, as extending the area over which the black-ware industry had time to extend before it met the advancing frontier of the red-ware.

The punctured ornamentation also has a wide geographical distribution, and fairly well-defined limits of prevalence in time. At Hissarlik it occurs, associated (just as on the figure from Adalia) with linear incisions, on the black-ware of the lowest stratum¹; but it disappears after the advent of the red-ware. North and west of Hissarlik, similar punctured ornamentation occurs at Butmir and other sites in South-Eastern Europe² on pottery-fabrics which are related, if not ancestral, to those of the "first town" of Hissarlik. South and west of the Hellespont, Asia Minor, ill-explored, interposes a blank as yet. In Cyprus, where no antecedent black-ware-period is known, the punctured ornament also is almost absent: in fact, I know of only one example at all; on a shattered flask of red-ware in the Ashmolean Museum.³ The "black punctured ware" which appears in Cyprus in the middle period of the Bronze Age,⁴ originates, as I have shown elsewhere,⁵ probably on the Palestinian coast, and was imported thence both into Cyprus, and into Egypt from the twelfth to the eighteenth dynasty. It may be remotely descended from the punctured black-wares from pre-dynastic Egypt⁶ and further west⁷; and of this earlier tradition of punctured ornament, magnificent examples are seen on the great doorways, and on the sculptured altar, of the megalithic buildings of Malta.⁸

Both these considerations also enable us to assign the figure to its approximate period: for the advance of the red-ware is intimately connected, as I have pointed

¹ *Ilios*, Figs. 32, 45, 271, 292, 310, 312, 314. Cf. p. 252 (note 3) above.

² Petrie, *Nagada and Ballas*, pp. 38, 63.

³ Ashm. Mus. *Cypr. Inv.*, No. 79.

⁴ *Cyprus Museum Catalogue*, pp. 37-8, and Nos. 381-3.

⁵ *Journal of Hellenic Studies*, xvii, 140.

⁶ Petrie, *Nagada and Ballas*, Pl. XXX.

⁷ Ciempozuelos in Spain (*Bol. R. Acad. Madrid*, XXV, 436ff, Pl. IV, V, XII): Malta (fragmentary vase, apparently from the Bengemma necropolis, in the Valletta Museum, unpublished).

⁸ Perrot Chipiez, *l.c.* iii, Figs. 226-9.

out elsewhere,¹ with the advance of the first knowledge of copper, and the punctured ornament represents the highest artistic development of the black-ware which it immediately superseded.² We may therefore place the figure from Adalia close to the boundary between the latest Neolithic and the earliest Metallic Age; and in close proximity, as its style and ornamentation have indicated already, to the phase of culture which is represented by the lowest settlement of Hissarlik.

DISCUSSION.

The PRESIDENT alluded to the wide distribution of the owl-like faces on prehistoric objects, and stated that he believed that the peculiar ornamentation, formed by filling incisions with a white substance, was by no means confined to the Mediterranean; on the contrary he believed it would be found on careful examination that this method of decoration was in use by the potters of the Bronze Age in Britain, though the poor character of the ware compared with that of the Mediterranean made it very difficult to find examples to prove this with certainty.

¹ *Journ. Anthropol. Inst.*, xxvi, 309ff. *Cyprus Museum Catalogue*, pp. 15-17.

² Cf. Petrie, *Nagada and Ballas*, p. 38, on the connection between the punctured ornament and the first knowledge of copper.



A PRIMITIVE FIGURINE OF BLACK CLAY FROM ADALIA.

British Museum: Scale $\frac{1}{4}$.

ON STONE IMPLEMENTS FROM TASMANIA. EXTRACTS FROM A
LETTER BY J. PAXTON MOIR.

COMMUNICATED BY PROFESSOR E. B. TYLOR, F.R.S.

[PRESENTED NOVEMBER 27TH, 1900. WITH PLATES XXV, XXVI.]

THE extracts which follow are portions of a letter received by Professor Tylor from Mr. J. Paxton Moir, of Hobart, Tasmania, in answer to a request for further information as to a number of Tasmanian implements sent over to England by Mr. Moir; especially as to the localities in which they were found. Mr. Moir replied as follows:—

“I will now answer your inquiries as far as I can, although I have not yet sufficiently examined the camping grounds of the Tasmanian Aborigines to form a correct judgment. In fact, so far I have only reached the borders of investigation, having explored only a few camping grounds found within an area of about seven miles long by two or three miles in width, and that in one only of the southern parts of Tasmania (Buckingham) which county is perhaps the best to select as representative in many ways. Also, I have yet to ascertain what is to be found at a depth below an ordinary plough furrow. I have explored shell-beds to a depth of 3 feet where partly exposed on the river banks, but then found very few stones. I am sending you one found with shells 8 inches below the surface, which is a two-edged knife, probably used to cut up tough shell-fish, or to cut them from their shells. [Apparently that shown in Plate XXVI, Fig. 12.] With this you will receive two I found on the surface of undisturbed ground (*i.e.*, ground in its natural state as it was in the days of the natives, except that it had been swept by a bush fire), probably two dropped while having their last hunt. These two I found about a mile inland, away back from their sea-side camping ground [they are round or oval-shaped and are chipped all round, Plate XXV, Figs. 7, 8].

“The ones found by Mr. Morton in Australia on the Murchison River are mostly of this class, but less in thickness and nicely chipped—one appears to have a ground edge. They are of a stone easily chipped and rich in colour, and some are variegated in colour. Their rich colour attracts attention, but they are no better in make or finish than the better class of Tasmanian implements.

“In answer to one of your inquiries, for general illustration I have dropped in a couple of handfuls of stones just as picked up two or three days ago, without selection, from off a piece of ploughed and harrowed ground of less than quarter acre area. This is part of a camping ground just half a mile from here. They will give you an idea of the large number of ‘gravers’ made by the Tasmanian

Aborigines. As a rule I find gravers, scrapers and skinners about equal in proportion, *axes* much less in number, large axes very few.

"I send you fifteen just as gathered up in about ten minutes, without making choice or preference, beyond discarding a few wanting in character found with them. The largest may be either a *spear axe* or small hand-chopper, or a large skinning tool [Plate XXV, Fig. 2] and may be held thus with the forefinger at the back of the stone resting in hollow at back of stone, and thumb lying along the front, with *ball* of thumb resting on slope of face—probably to give a sliding or forward push to the stone the moment it descends on the wood—a sort of sliding cut. It may also be held in the palm of the hand at right angles to the wrist. Five are circular shaped and square edged *skinners* or skinning tools. One has one edge a little hollow which may be for cutting the skin round the *legs* of animals—a dirty white stone; and may be held between the thumb and forefinger, with the forefinger and others bent or tucked round at back of stone under the thumb. While some of these and of other tools may be used also as scrapers, there is in this ten minutes' gathering one double concave scraper [Plate XXVI, Figs. 13, 16, 19, are inserted as specimens of concave scrapers and gravers].

"Usually the scrapers are more plentiful, while here no less than six are gravers, four or five of which are almost identical in shape, and are held between the thumb and forefinger, the forefinger being bent or tucked round under the thumb. One or two are sharp-edged cutting flakes or knives, and one in particular has the appearance as of a ground edge with a little chipping; the next two edges are also cutting edges, and the edge to right looks like a small concave scraper.

"If this is a ground edged implement then I have found several; but if not, I may say I have not yet found any that have been ground by the Aborigines of Tasmania. I will make further search for ground tools. If we compare Tasmanian tools with the beautifully ground axes and adzes of the New Zealand and New Guinea natives, then we see how far the Tasmanian Aborigines are behind them; but for variety of form and purpose and ingenuity in chipping, the Tasmanians hold their own against Australian implements, provided we make comparison with unground hand-gripped tools only.

"With regard to stones made to fit or use in a club or handle of any sort, I have never yet seen a Tasmanian stone that could be used that way—every implement is made to fit the hand so far as I have met with them; and I have carefully examined thousands. You mention that Tasmanian-like implements are found in Australia. This is correct, and any *chipped* stone found in any part of Australia can be matched for shape and style in Tasmania (save and except spear heads and war implements). A friend of mine on a visit to Melbourne, Victoria, walked several miles out of Melbourne to some place near the water, and seeing a sunny slope or bank he walked over it, and found several chipped stones, but beyond putting a few in his pocket he made no selection. On showing them to

me I matched most of them with Tasmanian implements. They were but very ordinary in make or finish, and I am sorry my friend did not search for better specimens when in Victoria. The ground had not been ploughed or disturbed in any way.

"Some think with me that probably Tasmania and Australia were one continent many thousands of years ago, or were at least joined by a long narrow isthmus. Many mineral, botanical and other peculiarities agree and are common to both, to say nothing of emus, kangaroos and opossums. A few of the Australian blacks may have been driven down south, and found their way across the isthmus to the Tasmanian end and settled there, and then were afterwards cut off through the breaking up of the connecting isthmus. But of course this is mere conjecture.

"Next month I intend making a careful examination in parts of a camping ground to the depth of 2 or 3 feet, and shall send you specimens of the stone implements found, and each stone will be marked by label stating depth at which it was found and condition of soil with regard to colour and shells. As I have found some of every class of stone implement I know of, at camping ground on Bennett's Farm, North West Bay, about seven miles from here, I will operate there. It is one of the most beautifully situated camping grounds I have yet seen, and is a long tapering point with quiet sea on either side, and easy of access to the water, which deepens so very gradually that the natives could walk out for hundreds of yards without getting out of depth; and all kinds of shell-fish abounded. The land adjoining this point on the upper side has several springs and creeks which supplied them with fresh water at all seasons. The surrounding country abounded with kangaroo, opossums and other game, and probably by driving some of the kangaroos on to this point, they were the more easily captured by the natives."

[Among the specimens exhibited to illustrate Mr. Moir's communication the following are figured on Plates XXV and XXVI—small hand-axes or choppers, Figs. 1, 2, 9, 10; heavy axes, Figs. 3, 4; skinners and knives, Figs. 5, 7, 8, 11, 12, 15; small gravers, knives and scrapers, Figs. 6, 14, 17, 18; duck-bills, Figs. 13, 19; concave scraper, Fig. 16.]

DISCUSSION.

Mr. H. BALFOUR: It is impossible not to feel a keen interest in the subject of Mr. Paxton Moir's communication, whether we regard the culture of the Tasmanians by itself, as illustrating the life of a people living under conditions of extreme simplicity in a state of very low savagedom, or whether, taking a wider view, we consider the bearing of the evidence afforded by their condition of culture upon the general question of the developmental history of culture in general. It seems probable that we are justified in regarding the Tasmanians as *survivals* from an early stage in general human evolution, whose progress has, from various causes, been retarded and has remained in a state almost of arrested development,

leaving them as recently living illustrations of man in the remote past. When, however, we come to compare the arts of the Tasmanians with the remains of arts of the primitive inhabitants of Europe, Palæolithic man, it is essential that the great difference between the environmental conditions—climate, geographical surroundings, etc.—under which the two races lived, should not be overlooked, since their requirements must have differed widely. In regard to the forms of Tasmanian stone implements, these seem to be referable to relatively few types, mostly adapted to many uses. The hollow-scraper is adapted to smoothing and rounding spear shafts or for use as a rotary saw for cutting transversely. The so-called “graver” presents some difficulties, in so far as there seem to be few demands in the life of the people for a fine grooving tool. The cross hatching of a club handle to roughen the grip could be better and more easily done with a long-edged tool, and I am not aware that the Tasmanians were in the habit of making longitudinal furrows on their clubs and other implements after the fashion of many Australian tribes.

The most characteristic tool of the Tasmanians, viz., a cutting and scraping tool made from a broad flake, chipped to a bevelled edge from one face only, and usually having a flat unworked back, is one which not only belongs to the low culture of modern primitive races, and to early prehistoric races, but is the most persistent of all stone implements, having survived as a useful tool from early Stone age days through all subsequent periods to the present day, in the age of steel, where we may still find it to the fore as the most approved form of “flint” for use with steel itself for purposes of striking a light. In fact, stone implements exactly resembling in form those from Tasmania are liable to be found associated with finds of other periods besides the earliest, and, while an implement found in the Drift near Clermont may, as Dr. Tylor has urged, bear a striking resemblance to a typical Tasmanian implement, so may a neolith from the South Downs or elsewhere, or a stone of far later date. The special interest of these rude implements from Van Dieman’s Land lies, not so much in the positive evidence of their rude and primitive nature, but rather in the *negative* evidence which shows them to be unassociated with native-made implements of higher and more specialised forms, and, in reference to the parallel, quoted by Dr. Tylor from Mr. Morton’s find of rude implements on the Murchison River, West Australia, it is of importance to be clear as to whether those rude implements were or were not associated with others exhibiting higher finish and the attributes of more experienced treatment, *e.g.*, grinding and hafting.

Dr. Tylor referred to the manner in which most or all of the Tasmanian stone implements seemed readily to fit the hand, being apparently so shaped by design. It seems to me, however, after examining a large number of these stones, that this is really due in the main to the fact of the hand being a very adaptable organ of prehension, which can be made to suit itself to almost any of the shapes, and I question whether the ease with which the implement can be held in the hand is, except in a few instances, the result of as deliberate and careful a shaping to this end as has been suggested.

The great abundance of stone implements and flakes which is found in Tasmania might lead us to assume a time when the island was somewhat densely

populated, or to believe in a very long occupation, but on this evidence alone the conclusion would be hardly justified, as the implements are, for the most part, such as would have been quickly made and thrown away without regret as soon as the edges began to grow dull, and the great number found is probably to be explained as much by the quantity made and used by individuals, as by a theory of prolonged occupation or dense peopling of the island. In conclusion may I be allowed to point out how greatly the interests, now aroused too late in the culture of this recently extinct people, brings home to us the desirability of doing our utmost to study those primitive races which still remain to us, and not leaving their investigation until it is too late, until, in fact, we have to content ourselves with making, as in the case of the lost Tasmanian race, speculations based largely upon *post-mortem* study.

DR. GARSON: I have experienced the same difficulty as Professor Tylor has in forming an idea of the character of flint instruments from photographs taken of them when lying on an opaque surface, and would like to point out the advantage that is gained by placing them on a sheet of glass with a white background at a distance of 50 cm. or more below them, and photographing them from above. This is not a difficult procedure. It may be done by placing the camera in a vertical position above them with the lens pointing downwards, or the camera may be used in the ordinary horizontal position by prefixing a prism or a mirror to the lens. By far the best photographs of flint implements are stereoscopic views taken in the way I have just indicated.

For the purpose of skinning animals a moderately blunt round-ended flint implement, like some of those on the table, worked from one side, would, I think, be the form preferred, except for making the first incision. The side of the implement from which it was worked in its manufacture would probably be that directed towards the flesh in order to avoid injuring the skin, and the implement used with a sweeping motion chiefly from the wrist of the right hand, while with the left the skin would be held and a certain amount of traction applied to it.

The osteological remains of the Tasmanians show very conclusively that whatever the origin of these natives may have been, they had remained in a state of isolation from their fellow-men for a long period, until, in the course of generations, they had acquired certain characters peculiar to themselves, by which their skulls may be easily distinguished from those of other races. After careful study of their morphological characters I ventured some years ago to formulate my opinion that they were most nearly allied to the Negritos, and was pleased to find that Mr. Ling Roth, before I had placed in his hands my article containing my views for his book, and from other considerations, had quite independently come to the same conclusion as myself regarding their affinities.

THE PRESIDENT: The members of the Institute are, I am sure, grateful to Professor Tylor for the trouble he has taken in bringing these interesting implements here, and for the description he has given us of them and of their probable use. Our thanks are also due to Mr. Paxton Moir, who has furnished so much of the material for Professor Tylor's remarks. The productions of a primitive people like the Tasmanians are of the greatest value and importance in anthropology; and these possess a peculiar fascination from the fact that the race has become

extinct in our own time. It is gratifying to know that practical steps are being taken to preserve the story of the Australian blacks, so that they may not likewise disappear without an adequate record. The year's leave of absence granted to Professor Baldwin Spencer and Mr. Gillen for the purpose of studying the native races of Central Australia is a good omen and full of promise. There are two points in Professor Tylor's observations to which I feel bound to call attention. I am inclined to believe with Mr. Balfour that the way in which such rude implements as we see before us fit the hand is rather due to the adaptability of the human hand than to any refinement of work on the part of the Tasmanian native. The broad bulb on one face of the implement, which Professor Tylor thinks was made of set purpose to fit the palm of the hand, seems to me to be the natural, if not inevitable, result of the natural fracture of the stone, and this seems to be proved by the presence of a corresponding hollow on the other face, the matrix, so to say, of the bulb of the adjacent flake. The other point to which I wish to allude is the statement by Professor Tylor with regard to the finding of certain implements in Australia itself. These, he said, were chipped only, and not polished, and were *therefore older* than the polished implements from the same continent. Here I cannot follow him. The Australian implements, like those of the neolithic age in this country, were chipped into shape and then polished, and many thousands of neolithic age are not polished at all. Moreover, it is certain that the Australian native was polishing his stone implements at the same time that the Tasmanian was content, as far as we know at present, with his chipped unpolished tools. How then can we say without other evidence that there is any difference in date between implements that are chipped only, and those that are chipped and polished?

Professor TYLOR: I should like, before we separate, to express once more my sense of the value of Mr. Moir's work, in searching for these implements on the site of a definite encampment. His results, I think, tend to confirm the opinion that these implements were never ground; and that, while mostly fitted to be grasped in the hand, they could not have been fixed in handles.



STONE IMPLEMENTS FROM TASMANIA.

COLLECTED BY MR. J. PAXTON MOIR.



STONE IMPLEMENTS FROM TASMANIA.

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ON THE PAGANISM OF THE CIVILISED IROQUOIS OF ONTARIO.

By DAVID BOYLE, Curator of the Archaeological Museum of Ontario.

It has often been a subject for doubt whether this or that primitive people, if left to itself, would have emerged into civilisation—in other words, it has proved a matter of uncertainty whether the people concerned possessed the potency of progress. In some cases Dame Nature has relentlessly cut off the supply of raw material before the experiment was well begun, and in others but a short time afterwards, showing us, at any rate, that the elements of success were nullified, and worse than nullified, by contact with superior peoples.

Respecting no division of the human race has there been more diversity of opinion as to innate possibilities of improvement than with regard to our American Indians, or, as a sister society has lately decided to call them, *Amerinds*. But the terms just mentioned are of very wide application—much too wide to make it possible for any one to arrive at a conclusion; for what is true of one stock, or of one group in a stock, may be wholly, or largely, inapplicable to any other division or subdivision.

The Huron Iroquois believe that they themselves originated from a hole under a hill on the north shore of the St. Lawrence river. Their traditions further declare that on account of a great dissension which took place, those who are latterly known more specifically as Hurons, and have been regarded by Brinton and Hale on philological grounds as the senior branch, found their way by circuitous routes to the country which lies north of Toronto, on the south shore of the Georgian Bay; while the portion we call Iroquois took a southerly course and occupied the northern and central part of what is now the state of New York.

Other two not inconsiderable bodies found excellent hunting grounds still farther west, on the northern and southern shores of Lake Erie, the former being known to us as the Attiwandarons, or Neutrals, and the latter as the Eries, or Cats. Other divisions lying south of the main body were the Tuscaroras and Andastes. It is wholly with those who made their home in New York and ultimately in Ontario, that we are now concerned.

It is unnecessary for present purposes to follow the history of these people from the date of their first contact with the French. Let it suffice to say that early in the seventeenth century they became the undying enemies of France, on account of an attack that was made on them by Champlain, who allied himself with the Hurons of Ontario, and thus initiated a series of wars that continued

until the French were compelled to retire from the continent. This almost chronic state of hostilities, however, did not prevent French missionaries from devoting themselves to the conversion of these most untamable of savages, a small portion of whom became Roman Catholics, and have left descendants living now at St. Regis and Caughnawaga on the St. Lawrence. Protestant missionaries also, both Dutch and English, met with some success; but still a very large minority remained true to paganism, so that of those who, on account of their loyalty to us, left the newly formed United States to take up their abode in Canada, nearly one-fourth clung to the belief of their forefathers. To-day the proportion of avowed pagans to professing Christians is about the same, and we have therefore, on the Grand River Reserve in Ontario, a pagan population of fully one thousand persons. There is another settlement on the Bay of Quinte at Deseronto, all the members of which are Mohawks, and profess Christianity.

It will be seen very readily that a condition of society in which paganism openly professed and practised has existed side by side with Christianity for nearly three hundred years cannot fail to possess many features of peculiar interest to the ethnological student, and to afford much material for profound study.

One of the first things that obtrudes itself on the attention of a visitor, even during a brief stay among the Iroquois, is the utter indifference of Christian or of pagan to the religious convictions of each other. In their Council or governing body of fifty-two members both beliefs are represented; yet no recriminations or causes of difference occur on this account. Many of the so-called Christians are influenced largely by old-time predilections, and either attend no place of worship at all or would just as soon put in an appearance at a pagan festival in the long-house. Still it must be acknowledged that there are whole families on the Reserve which are as truly Christian as birth, bringing-up, and Indian nature render possible, but one's opinion of the possibilities need not be unreasonably high.

The pagan does not regard himself, nor is he regarded by others, as being in any degree, or in any sense, inferior. He is not ostentatiously a pagan other than in connection with the regulation feasts, such as those of the New Year (when the white dog is burned), the strawberry-dance, the corn-dance, and many others. Indeed, it is not characteristic of the Indian to be ostentatious in any capacity, except that of a brave, and, for the Iroquois, the days of bravery in his sense have long since departed. In his religious or ceremonial dances he may deck himself gorgeously with bead-work, cheap jewellery, feathers, and highly coloured garments, but there is an evident lack of individuality about him notwithstanding. He seems to regard himself merely as an anybody; as a quite indifferent unit of his clan; as one who happens to have the necessary toggery for such a display, and whose impersonal or clan duty it is to appear in any sort of grotesque costume he pleases. Other men please themselves also by attending

the most solemn feasts in everyday clothing. Most of the younger fellows appear in fashionable tailor-made garb, with linen collars and bright silk neckties. The women dress, as a rule, more carefully and conservatively than the men, their chief article of apparel besides their gowns or dresses being a brightly coloured shawl, either of some strong uniform colour or of a large tartan pattern.

Now as to the worship itself. Originally it was, as a matter of course, purely of a natural kind; that is to say, it was founded wholly on the experience of the race respecting everyday phenomena, the occurrence of which was accounted for by explanatory tales based on anthropomorphic and zoomorphic grounds. Thus the sun would appear to have been regarded as an animate being with whom, in time, became associated the Great White Wolf, if, indeed, it was not itself this very animal. Whiteness, it may be observed, was always associated in the Indian mind with the East, and, in time, with goodness, success, and health. The other cardinal points were also connected with their respective colours. In some mythologies the deer became the mediator of the sun, and in others the turtle. Among nearly all American peoples the rattlesnake was of supreme importance, yet we do not find this creature represented among the totems of the Iroquois. Animism, or spiritism, pervaded every nook and cranny of Indian belief. Not only could the lower animals converse with one another, and arrange plans to benefit their human friends or plots for the discomfiture of their enemies, but the hills, the rocks, the streams, the trees, and every object in nature, as well as those produced by art, possessed a spirit. As a result of this conviction, the Indian was, and is, an arrant coward in the dark.

They also had their equivalent of the "fairies" of the Old World—little people who held the power to assist men, or to play them infinite mischief.

Certain places were, to use a Scottish phrase, "no canny." Among the Iroquois such places were mostly near rapids, or *were* the rapids, but sometimes they were in the form of caverns, or of beetling cliffs, on the shores of rock-bound lakes. On approaching or in passing such spots placatory offerings of tobacco were made, and sometimes objects of considerable value were dropped into the water.

To dreams, our Iroquois, with all his congeners, was an abject slave, for he regarded them as the experiences of the first of his three souls, the second being the one which always remained with his body, and the third that which became visible as his shadow.

Roughly, this was the mental attitude of the Iroquois to nature and natural phenomena until the appearance of Ayontwatha, the "Hiawatha" of Longfellow, who, however, makes an ethnological muddle by assigning an Iroquois culture-hero to Algonkin legend. Ayontwatha was, first of all, a political reformer, if we may so dignify one who lived in such a crude condition of society; but his success in bringing about a confederation of the Caniengas, Senecas, Cayugas, Onondagas, and Oneidas must have exercised a very powerful influence in modifying some beliefs and intensifying others among all these "nations" or tribes.

We know not when he lived, despite attempts that have been made both by Indians and by whites to determine his date; indeed, we are uncertain whether there ever was such a person. But, in any event, there came a time when the spirit of change entered the minds of the Iroquois, and henceforth they became more adaptive and more modifiable than their surrounding Algonkin neighbours. Thus it was, in large measure, that they proved themselves such unconquerable and resourceful opponents of European, and especially of French, aggression.

After falling under purely British influence the number of professing Christians rapidly increased, but, as has already been pointed out, fully 25 per cent. have remained steadfastly pagan.

It is from this point that our study of Iroquois paganism becomes interesting, because it was impossible that Christian and pagan doctrines and practices could long exist in proximity without some modifying influences extending from the stronger to the weaker side. Long before this time, however, the Iroquois, in common with many other native races, had, perhaps unconsciously, adopted the idea of a Great Spirit from the missionaries, for in the aboriginal pantheon no *one* being of this kind exercised supreme power, or even seemed to take any interest in the work of the other spirits, an idea based no doubt on the customs of the Indians themselves, over whom no one man exercised absolute sway.

Having adopted the idea of a Great Spirit, the admission of some other beliefs became easier, not because they had any logical connection at all, for logic is quite foreign to the Indian mind, but because, perhaps, of the familiarity consequent on intercourse with Christians, both white and of their own kind.

It was probably on account of knowledge arrived at in some such way that an Onondaga, by name Ska-ne-o-dy-o, who lived at the end of the eighteenth century (in 1790 according to some), declared himself a prophet and claimed to have had intercourse with divine beings. His congeners, by this time, knew enough about Christianity to be in some measure prepared for a message from the Great Spirit, and their peculiar notions concerning soul-experiences fitted in with the announcement of Ska-ne-o-dy-o that he had been favoured with an interview with four beings in heaven. Undoubtedly the Indians had heard of the Trinity, but as three is an unsatisfactory number to the Indian mind, we here have a reference to four persons, or the Four Angels, for although Ska-ne-o-dy-o *saw* only three, the fourth one was always present.

It is somewhat remarkable that although this revelation is of such a comparatively recent date, there is a good deal of confusion respecting what is known of the circumstances by the friends and relations of the prophet; but this only goes to show us how extremely difficult it is to get at the truth in such matters, and how little confidence we may place in tradition, if we demand exactitude.

All the stories, however, agree in the statement that Ska-ne-o-dy-o's revelation came to him while he was in a trance, so that we need not care whether this condition lasted for only a few hours or until he came to himself

on the fourth day. He did not profess that he had seen the Great Spirit, but only the four beings who were commissioned by the Great Spirit to deliver His message. These were young men, dressed in the height of Indian fashion, and carrying bows and arrows. Here we have a compromise and a correspondence, the former as to the number, and the latter as to the office; for Christian teaching always introduces a medium of communication between the Creator and His people. As a matter of course, the four persons were Indians, and behaved in Indian manner, for otherwise the appeal to Indian minds would have lost much of its effect. Still Ska-ne-o-dy-o perceived clearly enough that his people required a new gospel—one that would correspond in a measure to the altered circumstances in which they found themselves, and that would, to some extent, place them on a level with white men. Himself, no doubt, unaware that a belief in the Great Spirit was one of comparatively recent acquirement, he urged the people to offer prayers to Niyoh, the Creator, but he adds a touch of Indian anthropomorphism when he teaches that all such addresses must be made before noon, on the ground that as the Great Spirit goes to sleep in the afternoon, he cannot then hear anything said to Him. These prayers were nearly an adjunct to the old-time dances, which were to be maintained; for the angels said to Ska-ne-o-dy-o, "You must worship Niyoh, the Great Spirit, by dancing the turtle-dance at the new moon when the strawberry ripens. At the new moon of the green corn you shall give a thanksgiving-dance. In the midwinter at the new moon you shall give another thanksgiving-dance. You shall have a thanksgiving-dance at the new moon at the time of making sugar. You shall dance at the new moon of planting-time, and pray for a good harvest. You shall dance at the new moon of the harvest-time, and give thanks for what the Great Spirit has given you." Among primitive peoples dancing is itself, as a distinguished writer has said, "praying with the feet." Oral prayer was therefore, largely, the result of European influence, something with which the Indian had become to some extent acquainted, and something that was of comparatively easy assimilation.

Even the matter of the prayers, however, is in the nature of a compromise, for the addresses to the Great Spirit are rather in the form of requests that He will command other entities to do their duty, the performance of which, but for His orders, might be done either reluctantly or not at all. Take, for example, bearing in mind, meanwhile, the animism which pervades the Indian mind, the following petitions in the prayer which is used at the Burning of the White Dog in connection with the New Year festival:—

"We ask that the sun will continue to shine on us and make all things grow.

"We ask that the moon may always give us light by night.

"We ask that the clouds may never cease to give us rain and snow.

"We ask that the winds may always blow.

"We ask that the trees and plants may always grow.

"We ask that Thou wouldst send all sorts of animals for food and clothing, and make the birds increase in number."

In this modern form of prayer it will be observed that Rawen Niyoh, the Great Spirit, is addressed as controller and director; in older (but not the oldest) forms of address, which certainly are not prayers, the animistic and individually independent idea comes out strongly, as when, for example, at the green-corn-dance the head man, or speaker, says, "We thank the earth for all the things that grow for food," and at a Cayuga sun-dance, at which I was present, the old chief opened the ceremonies by thanking the earth for having yielded grass, trees, tobacco, and medicine, the sun for giving light and heat, the moon for making dew, and the thunder for supplying rain and for preventing serpents from coming up through the ground and destroying the people. And then comes this: "We thank the Four Angels for protecting us from sickness, disease, and accident, and the Great Spirit for providing everything and governing all things, although we cannot see Him and never will see Him unless we are good." Here the stock and the grafts are quite distinguishable; the ancient phrases remain much as we may suppose them to have been for centuries, while Rawen Niyoh and the Four Angels are a plain addition without the remotest attempt to modify the old or assimilate the new.

The animistic and the anthropomorphic assert their sway once more when we are gravely informed that Rawen Niyoh also thought it would be a good plan to have some Thunderers, to whom he gave power to take charge of the whole world, telling them to use plenty of cold water in their work, as long as the world and the people should last. "He said to the Thunderers, 'You may go among the people just whenever you like, and give them all the water they need'; and we know that all the plants and trees are pleased when the cold water comes to the earth. They are glad the Thunderers have not forgotten them. Niyoh also told the Thunderers to kill anything that might be unlucky to the people."

The Indian Angels vouchsafed to Ska-ne-o-dy-o other information, some of which had reference to what we may suppose the best of his people had always believed, but some of it undoubtedly inspired by Christian influence. Thus they told him that Niyoh intended men and women to marry and have families; that the children were to be treated kindly, not to be provoked in any way, not to be despised for ugliness or awkwardness, never to be whipped; that homeless children should be adopted by married persons without families; and that no person in want should be turned away hungry from one's door. In all this, as well as in what appertains to the holding of dances, or festivals, we have what is native, or nearly so; but when Ska-ne-o-dy-o declares that the four persons said, "Your people must not play cards," and "Niyoh says it is wicked to play a fiddle, and wrong to drink rum," he is profiting by his contact with white people. The reasons adduced for the last-named inhibition are truly Indian. "If," said the prophet, "you are drunk when you go hunting, the animals will smell you a long way off and keep out of your way; if you go a-fishing the fish will hide; if you are driving a horse the smell of the rum will make him run away; your dog will

not like you ; your corn and pumpkins and tobacco will not grow ; if you try to dance or to run, or to sit still, you will have no sense ; everything will go wrong."

It might be difficult to find a better illustration of purely aboriginal and illogical reasoning than this is. Incapacity to hunt, fish, manage a dog or a horse, or to cultivate plants is attributed to the intelligence of these things ; they *know* that the man has been drinking too much, and for this reason fear him, or despise him ; and it is only when the man tries to sit still, or to run, or to dance when drunk, that he himself will discover his lack of sense.

The inhibitions respecting cards and the use of the fiddle were no doubt intended by the "four persons"—*i.e.*, by Ska-ne-o-dy-o—to prevent too much social intercourse with white people, the former on account of the Indians' well-known gambling propensities, and the latter owing to their equally notorious desire for the strong drinks which usually accompanied such festivities a century ago. It was no doubt also intended to prevent any assimilation of the native feasts or dances with the white peoples' social gatherings—perhaps, indeed, this was the main consideration.

Gambling in general, however, was not forbidden, only gambling with cards. The Indian prophet was too well aware how utterly impossible it would be, even were he wishful, to abolish this practice among his people. Twice a year at the great public feasts it was allowable to play for stakes ; and at home, or elsewhere, they could always do as they pleased in this respect.

The feasts or dances so often referred to were, and are, a stern necessity. Without these, life to the pagan Indian would not be worth living, and one of them is held on every possible occasion in addition to the regular, seasonable, ceremonial affairs to which reference has already been made. But in accordance with present custom some of the latter are set apart for thanksgiving. Now the giving of thanks (in our sense) for anything is wholly foreign to Indian nature, as indeed it is perhaps to aboriginal nature everywhere. It is an acquired method of expression, and whether the *sentiment* of gratitude has yet been acquired is another question.

Agreeably to the totemic idea thankfulness is out of place, or rather has no existence in any of life's conditions. For primitive man in his tribal relations, individualism has but a hazy meaning, if any at all. He gives as freely as he takes, neither expecting nor giving thanks, but his associations with us have taught him to comply with form at least, and thus in some measure to remove from himself the reproach of the white man respecting Indian "ingratitude." We find, therefore, that Ska-ne-o-dy-o has introduced expressions of thankfulness in connection with some of the ceremonial feasts, but it is also observable in the older and slightly adulterated dance-speeches that not a word of this kind occurs. Take, for example, the address of the head man at the Burning of the White Dog, notwithstanding its ostensible appeal to Niyoh. Following what may be called the invocation, he asks that the sun, moon, clouds, and winds may continue to perform their duties ; that the warriors, young men, and women

may be preserved in health and strength; that medicine-plants and fruit trees may continue to grow; that game may be abundant for food and clothing; and he concludes with the self-righteous and unconsciously humorous wish, "May the scent of the tobacco I have thrown on the fire reach Thee to let Thee know we are still good, and that Thou mayest give us all that we have asked."

With the introduction or adoption of the belief in a Great Spirit—"One, you know, that bosses all the other spirits, and the little peoples, and Ta-ron-ya-wá-gon, and Ongwehógon, you know," as a Seneca once explained to me—it became necessary to provide some means of communication between heaven and earth in addition to prayer and thanksgiving, which, alone, are somewhat too intangible for this purpose. The Burning of the White Dog was therefore seized as a fitting occasion for the sending of messages heavenwards. But this long antedates the appearance of Ska-ne-o-dy-o, who actually forbade the ceremony, probably because it was a subject of ridicule among white people. Notwithstanding both circumstances, our Canadian Iroquois pagans maintain the custom in connection with their annual New Year's dance at the time of the February new moon, when near the close of a ten days' celebration the master of ceremonies reverently says—

"Great Master, behold here all of our people who hold the old faith, and who intend to abide by it.

"By means of this dog being burned we hope to please Thee, and that just as we have decked it with ribbons and beads, Thou wilt grant favours to us, Thy own people.

"I now place the dog on the fire that its spirit may find its way to Thee who made it, and made everything, and by this means we hope to get all we want from Thee in return."

In full accordance with Indian belief, the spirit of the dog, on reaching Niyoh, will apprise him of the state of affairs on the earth, a belief that not only proves a want of faith in the adequacy of prayer alone, but which could not have had any reason for its existence before Rawen Niyoh himself was introduced to "boss all the other spirits." But the killing, burning, or sacrifice of a white dog has always, and everywhere over the northern part of our continent, possessed some mysterious influence. In my archaeological report for 1898 I have taken some pains to summarise our knowledge of this custom, whereby it appears that not only with the Iroquois, but among the Algonkian, Athabaskan, and Siouan peoples, as well as among the more highly cultured Aztecs, the custom of using such an animal in one or other of these ways was very generally observed.

It may suffice in this connection to state that in the opinion of General Clark, of Auburn, New York, who has made a special study of Iroquoian mythology, the white dog is now employed as a substitute for the white wolf, which formerly represented the sun; and Dr. Brinton, quoting Von Tschudi, approves the statement of the latter that "white dogs were closely related with cosmogonical and culture myths" in many native religions.

However this may be, the point to be observed here is that our present-day pagan Iroquois, having long since forgotten the original significance of the rite, now attribute mediatorial or intercessory powers to the white dog, the spirit of one of which they despatch annually to carry a message to Niyoh, or Rawen Niyoh, the Creator. Nothing can be more certain than this, that when there was no Great Spirit there was no need for the services of a messenger.

But notwithstanding the evident influences which led to this new idea respecting the office of the white dog's annual visit, implying as it does a heaven, as distinguished from a mere "happy hunting-ground," it is worthy of notice that our Indian friends did not take kindly to the idea of a hell, which they have left in the undisturbed possession of the white man. Punishment in any case was objectionable to the Indian. It may be difficult to reconcile this statement with our knowledge of the cruelties he inflicted on his enemies, whether white or of his own blood; but his purpose on such occasions was rather to maintain the honour of his totem, or of his tribe, by rendering or providing an equivalent for the sufferings of his own people when they were in the enemies' hands, as well as with a view to test the power of his captives' endurance, hoping, if possible, to make them evince signs of pain, and thus prove themselves to be only women. Our pagan Iroquois, then, has no hell, but his leniency in this respect is more than counterbalanced by his exclusiveness respecting heaven, where he admits no white man. On the New York Reserve it is asserted that George Washington, on account of his goodness to the Indians, has been permitted to go half-way, where he remains speechless, and accompanied by his dog; but on the Grand River Reserve in Ontario, I have never heard but one Indian refer to this exception, and it is not improbable that in time it will be wholly forgotten among Canadian pagans.

The remark has often been made that certain groups of people in various parts of the world have failed to keep pace with neighbouring groups through sheer inability to advance beyond a given line. Among ourselves civilisation is a comparatively slow process, and with some of us it is of much slower development than it is with the mass. American Indians are not a progressive people. They assimilate European notions very slowly, and, at best, somewhat imperfectly. Tradition and usage are more powerful than appeals to action along new lines, even when the advantages of the latter course are made plain. It is only when tradition has been deprived of its power by the segregation of individuals from national or tribal associations that tradition itself ceases to govern.

If we judge the pagan Iroquois thus, we shall wonder that they have been in any way modified by European contact so far as their religion is concerned, for they are thoroughly separated from their Christian fellows in all that concerns their myths and superstitions. It is not with them, as it is with us, a matter of disputation concerning what constitutes the true religion, for according to their philosophy it is not necessary that all should be of one faith. The white man's God need not be—indeed, is not likely to be—the same being as the Indian's

God, and here we see how very superficially after all the idea of a Great Spirit affects the aboriginal mind. It has never been made to fit exactly into the Indian pantheon, which recognises no paramount being, but leaves the thousand-and-one phenomena to the good or bad offices of a thousand-and-one independent spirits, or, perhaps it would be more correct to say, to spirits each of whom is independent in his own sphere, for it is within the power of any one of these beings to create so much trouble on his own account as to compel one or more of the others to "come to time" in any matter of dispute.

The wonder, then, is, not that Iroquois paganism has been to some extent modified by Christian influences, but that it has been modified so little. One must mingle with these people in their homes, in the fields, at their games, and in their long-houses in connection with their feasts or dances, to appreciate fully their mental attitude in this respect. They are utterly unconscious of any similarity between their own and the white man's religion. They believe that Niyoh, the Great Spirit, has always formed a part of Indian belief, and consequently have no difficulty in accepting the story respecting the four persons or angels he commissioned to communicate with Ska-ne-o-dy-o. Similarly they have no hesitation in the offering of specific thanks to Rawen Niyoh, and have perfect faith in the intermediary services of the white dog. If we added to these a few suggestions respecting conduct, based on the Christian code of morals, we have about all for which Iroquois paganism is indebted to European culture after a period of more or less direct contact lasting for three hundred and fifty years. It is questionable whether many other forms of paganism have remained so unchanged for the same length of time, and in anything approaching similar circumstances. It is, indeed, a matter of doubt whether several forms of Christianity and Mohammedanism have not suffered or benefited to a greater extent, even during the space of the present century.

Here we have in almost their pristine simplicity and crudity the music, the songs, the dances, the speeches, and the ceremonies of old, but the origin and meaning have long since been forgotten. Their maintenance is purely conservative. Even the significance of the *words* of the song is lost, and in many of the ceremonial rote-speeches in connection with the feasts, words and phrases are employed respecting which even the oldest medicine man has no knowledge. In this, however, they are only a few degrees worse than ourselves. The same is true with regard to such customs as the "scattering of ashes," the spraying of heads with sweetened water, the anointing of heads with sunflower oil, and several other rites.

It is interesting, also, to note that all these are indulged in by the half-breeds, and by some who are more than half white, seemingly with quite as much zest as by those of purer or wholly pure Indian blood. It seems somewhat anomalous, at first sight, to observe, engaged in a dance or a dream interpretation, persons of all shades of colour, from the darkest (which is darker

than mulatto) to a tint that conveys only the slightest suspicion of Indian blood.

But the old-time ways are doomed, and will probably disappear as a system long before the people die out, for the young men mingle more and more with their white neighbours, the young women frequently find employment as domestics in "white houses," and parents are gradually losing their grip of the ancient forms, although they cling tenaciously to the superstitions these typify.

Meanwhile the condition is an extremely interesting and instructive one to the anthropologist, one which in many respects is unique in the history of the world.

I have frequently regretted that when the British Association met in Toronto a few years ago, no arrangements were made for a visit of the Anthropological Section to the Six Nations' Reserve, only some sixty miles distant, when it would have been a matter of but little difficulty to arrange for a special pagan feast, and where the members might have been able to realise, to some extent, much that has been either only slightly adverted to or imperfectly explained in the present paper, respecting the pagan rites and ceremonies of the Iroquois—or, as one has called them, the "Romans of America."

NOTES ON THE HISTORY OF VUMBA, EAST AFRICA.

BY A. C. HOLLIS.

[WITH PLATES XXVII, XXVIII, XXIX.]

THE Mohammedans, as is well known, displayed, for some centuries after the death of their great prophet, a remarkable activity in attempting to subjugate and, at the same time, to evangelise the world. Thus, the Moors predominated in northern Africa and extended their conquests to Spain and to other countries in southern Europe; the Saracens drove the Byzantine emperors from their Asiatic dominions and made themselves masters of the places held sacred by the early Christian Church; and the Arabs and Persians emigrated to and colonised various parts of India and Africa.

A few of the latter people, coming from the plains of Shirazi, settled, about the time King John ascended the throne of England, near the mouth of a river on the mainland of the east coast of Africa, almost opposite Pemba (a large island north of Zanzibar), and some fifty miles south of Mombasa, the capital of the East Africa Protectorate and the terminus of the Uganda Railway. This river, the mouth of which divides the British and German spheres of influence, is known by the name of *Umba*, whilst the district watered by its delta is called *Vumba*.¹

To the present day, on the banks of the Mchamalale² stream (one of the arms of the Umba river), in an almost impenetrable jungle between Vanga³ and Jasin,⁴ are to be seen the remains of what formerly must have been a large city. This

¹ The Umba river rises near Mlalo in the Usambara hills, a range running at right angles to the coast from Tanga (a town thirty miles south of the Anglo-German frontier) towards Kilima Njaro, the highest mountain in Africa. The name is believed to be taken from the Kiswahili, or native word, *Maumba*, meaning sea-urchins, which are found in large quantities on its banks, whilst Vumba is thought to be a corruption of *Kuumba viungu*, to make pots, the soil being particularly adapted to pottery work of all kinds, large quantities of earthen utensils being shipped from the neighbouring ports to Zanzibar, Pemba and Mombasa. The Portuguese, it would seem, originally called the district *Uumba*, i.e., the country of the Umba; it is, therefore, possible that both Vumba and Umba are derived from the same root.

² Mchamalale is commonly, but erroneously, written Msemelale.

³ Vanga is sometimes incorrectly spelt Wanga (*vide* also Le Roi: *Le Kilimanjaro*). This is the most southerly town in British territory. *Kuvanga*, in Kiswahili, is the same as *Kupanga*, and means, literally, to pile up (loads), hence, to rest or stay. The word is believed to refer to the fertility of the soil. Of this town more anon.

⁴ Jasin is a small town in German East Africa, three miles from Vanga.

was Vumba Kuu, or Great Vumba. Vumba Ndogo, or Little Vumba, is the name of the Wasin¹-Kigomeni²-Vanga district.

When, in 1895, Sheikh Mbaruk bin Rashid el-Khelani-el-Mazrui of Gasi³ joined forces with a distant cousin, Sheikh Mubarak bin Rashid el-Mazrui of Takaungu,⁴ and rebelled against the British Government, which had lately superseded the Imperial British East Africa Company,⁵ one of the first aggressive acts on his part was to plunder and sack Vanga,⁶ whilst, shortly afterwards, our troops burnt Ormuz,⁷ the chief village in the Pongwe district.⁸

With the destruction of these two towns many priceless books and documents belonging to the Arab settlers were lost, amongst them the Chronicles of Vumba Kuu. These, I am told, were contained in a single manuscript volume and gave a list of the names of the chieftains of this place together with the dates of events which happened during their reigns, from *circa* 600 to 1100 A.H., or A.D. 1204 to 1688.⁹

In order, therefore, to save, to a certain extent, the history of the country, known to but a few of a generation rapidly passing away, I have written down the story as related to me by the aged Shereef Abubakari bin¹⁰ Kasim bin Diwan Kikambala el-Masela-ba-Alaui,¹¹ by his brother, Shereef Alaui bin Kasim bin Diwan Kikambala el-Masela-ba-Alaui, by the Liwali of Vanga, Abubakari bin Ali el-Hasraji-el-ba-Urii (a descendant of Diwan Ruga and a cousin of Diwan Marithia), by Shereef Abubakari bin Diwan Kilimia el-Jadid, by Buhuri bin Nyale bin Mwalimu Mwathathi el-Bajun, the chief elder of the Wasegeju of Pongwe, and by Kalamu Mwacholozi, the *Kubo* or Chief of the Wadigo,¹² all of whom are well versed in the traditions and folk-lore of the land.

¹ Wasin (frequently written Wassein) is an island off the British coast not far from Vanga. For a description, *vide* page 284.

² Kigomeni is a small fishing village in German territory, near Jasin.

³ Gasi, commonly, but erroneously, spelt Gazi, is situated half-way between Mombasa and Vanga. From 1837 to 1895, it was the seat of the elder or *el-Khelani* branch of the Mazrui (or, to use the correct Arabic form, Mazaran) chieftains.

⁴ Takaungu, the seat of the younger branch of the Mazrui, is a town some thirty miles north of Mombasa.

⁵ *Vide* Blue-Book No. 6 (1896). *Correspondence concerning the recent rebellion in East Africa.*

⁶ *Ibid.*, p. 12.

⁷ *Ibid.*, p. 52.

⁸ Pongwe is the name of a part of Vumba Ndogo. The meaning of the word, which is pronounced by the natives *P'ongwe*, is unknown.

⁹ The Mohammedans reckon from the *Hijra* or era of the flight, which took place on Friday, July 16th, A.D. 622. The year contains $354\frac{11}{30}$ days.—*The Indian Calendar.*

¹⁰ *Bin* (Arabic *ibn*) means son of; *binti*, daughter of.

¹¹ *Alaui* is a contraction of the Arabic *Alui*.

¹² The Wadigo and Wasegeju are the principal native tribes inhabiting the Vumba district. According to tradition, the Wadigo, one of the numerous allied clans known collectively as the Wanyika, or desert people, who fringe this part of the African coast, were already settled in the country when the first of the Sultans of Vumba Kuu was chosen. They are believed to have come from Digi and Kirau in Shungwaya, the native name for the plains lying on the left

When I knew their story, I set to work to try and find the lost volume. In this I was unsuccessful, but, after some search, a manuscript book—a treatise on religious matters—was discovered at Vanga. This, as the author¹ informs the reader at the end of his essay, was finished at Pate,² after mid-day prayer, on the 7th day of the third month, 1133 A.H. (1721 A.D.). Down the margins of the pages of this book are jotted the dates of various events concerning the ba-Alaui, min-Ali-Sheikh-Abubakari-bin-Salim, el-Jadid and el-ba-Urii families, together with some pedigrees, which verify and corroborate the statements made by my informants. One other discovery was made, viz.:—a list of the nicknames of all the chieftains of Vumba Kuu in the handwriting of the last of the Diwans who died in 1897.

As will be seen later, I also refer, at times, to other books and documents, one especially, called *The Story of Mombasa*,³ by an unknown author, having been of great service to me. For the allusions made to the Portuguese state papers I am indebted to Mr. Justus Strandes, the author of *Die Portugiesenzeit von Ostafrika* (Berlin, 1899).

The chieftains of Vumba Kuu⁴ were considered as important as most of the rulers on the coast. Their successor of to-day, the Diwan⁵ or Pontiff of Vumba Ndogo, is merely the head of two or three large clans of Shereefs, *i.e.*, descendants

bank of the Tana, a river some two hundred miles north of Mombasa. The Wasegeju, or, as they were formerly called, the Wakilio, claim descent from the Somali. For an account of the arrival of these people, *vide* page 281. The name, Wasegeju, is derived from *Kusega*, to draw up the clothes, and *Juu*, high. This name was given them, owing to their wearing the skins round their loins higher than usual. The aboriginal inhabitants of this country are thought to have been the Wasi, who were divided into three groups, the Wamaraka, the Wamaumba and the Watwa. A few Wamaraka are now settled at Ada, a town some fifty miles west of Gasi, the Wamaumba live with the Wachonyi, one of the Wanyika tribes, some thirty miles north of Mombasa, whilst the Watwa are to be found in small numbers round Lamu, a well-known town not far from the mouth of the Tana river.

¹ The author was one Abubakari bin el-Fakihi Mwalimu Saleh bin el-Fakihi Mbwana Kombo bin el-Fakihi Haji bin Saburi bin el-Fakihi Suhele bin Sheikh el-Maruz-el-ba-Urii.

² Pate is a town of great antiquity on Siu Island near the mouth of the Tana river. It is sometimes erroneously written Patta or Pattah, and Siu is often wrongly spelt Siwi.

³ In this story, written in Arabic, the annals of Mombasa are recorded from the time of the coming of the Portuguese till the death, in 1856, of Seyyid Said, the first of the Albusaidi Sultans of Zanzibar. Although not given at such length as in Owen's *Narrative of voyages to explore the shores of Africa, Arabia and Madagascar*, in Kraft's *Reisen in Anstade*, or in Guillaumin's *Documents sur l'histoire, la géographie et le Commerce de l'Afrique Orientale*, they are interestingly written.

⁴ The chieftains of Vumba Kuu were called *Mwana Chambi* until circa 950 A.H. (1544 A.D.), when the name was changed to *Mwana Chambi Chandi*. About 1112 A.H. (1700 A.D.) it was again altered to *Diwan*. The other principal chieftains on the coast were those of Pate, Saadani or Utondwe (the Otondo of the Portuguese), Zanzibar or Unguja, and Kilwa. The name given to those of Pate was *Mwenyi Mui*, and, at a later date, *Fumo*, to those of Saadani, *Mwi Kamba*, and to those of Zanzibar and Kilwa, *Mfalme*. The less important chiefs of Tanga were called *Mwenyi Chambi*.

⁵ The name *Diwan* was borrowed from Pate. It means in Arabic *reigning house*. In Indian phraseology the East India Company was called *Diwan*.

of the Prophet's race. He is, however, held in high esteem by these people, and is much revered and almost worshipped by the ignorant Wadigo and Wasegeju.

The territory and jurisdiction of the Sultans of Vumba ranged, in olden times, from Mawe mawili, two rocks off Kwale, some ten miles north of Tanga, German East Africa, to Likoni, the south side of Port Kilindini, near Mombasa, and inland, from the Usambara hills, in the south, to what is now the Duruma country, west of Mombasa, in the north.

Although these chieftains acknowledged the Portuguese, and after the final withdrawal of the Portuguese from Mombasa in 1729 A.D.,¹ the Mazrui governors of that town as their over-lords, yet they were practically independent until 1253 A.H. (1837 A.D.),² when Mombasa was captured by the Albusaidi prince, Said bin Sultan, and the hereditary governor, Abdullah bin Hamis, was obliged to settle at Gasi. From this time dates the decline of their power. The Diwans of the present day, however, still receive many and often valuable gifts from the superstitious natives and others in exchange for charms. They also retain an ancient prerogative of becoming the owner of any slave, who, wishing to change masters, goes through the form of beating three times on the drum, which, for this purpose, stands outside the royal residence.

The chief qualification of a Diwan is to be a Shereef, descended, either in the male or female line, from the first Shereef Sultan of Vumba, Seyyid Abubakari bin Sheikh bin Abubakari el-Masela-ba-Alaui, otherwise called Diwan Ruga, who reigned from *circa* 1112 A.H. (1700 A.D.) till his death in 1155 A.H. (1742 A.D.). The only other qualifications necessary are that he be rich and that certain ancient customs be adhered to and rites performed before his election.

These are as follows:—In the first place, the candidate must marry the daughter of a Shereef or an Arab. This marriage is called *arusi ya ada*,³ and the bridegroom himself receives the title of *mwole*, which is a promotion from the ranks of the *vijana*.⁴ The fee referred to in this marriage ceremony means a great feast to all and sundry who wish to partake of it. If oxen are slaughtered, the marriage is called *arusi ya ng'ombe*,⁵ and the bridegroom receives more honour than at an *arusi ya ada*.

Should the bridegroom give a second feast to all his youthful friends, he is promoted another grade and is called *mtenzi*,⁶ in which case no *kijana* may sit at table with him.⁷

¹ Portuguese State papers. Bibliotheca Nacional de Lisboa. Codice Manuscripto, No. 465.

² *The Story of Mombasa*.

³ Literally marriage of the fee, meaning a marriage for which a fee or customary present is paid.

⁴ Plural of *kijana*, an unmarried youth.

⁵ Literally marriage of the ox.

⁶ *Mtenzi wa kukirima wa'u* means one who produces various kinds of food at a banquet. Vide Krapf's *Swahili-English Dictionary*, page 254.

⁷ A man who marries but does not give the customary feast is called *mondo*. He is not at all respected and is bound to do the bidding of a *mwole* or *mtenzi* without murmur or complaint. If a man has once arrived at the rank of *mtenzi*, he can demand an invitation to any feast given in his natal or adopted town.

After the marriage ceremony a certain period elapses before the candidate is called upon to prepare another feast. This occurs if his wife gives birth to a son.

At the next function which takes place, all the living descendants of Diwan Ruga and the members of the houses Ba-Amiri and Mwenyi Chandi¹ are called together, and at a great feast, at which they are given presents of money and clothes, the name of the candidate is submitted to them for approval. If they are satisfied with their presents and with the candidate himself, the latter is formally invested with the *vunda*.² He has now the right to wear wooden sandals instead of leather ones and is styled *Diwan*. Messengers are then sent to the Mohindzano clan of the Wadigo and to the Mwakamathi clan of the Wasegeju³ to request the pleasure of the company of their chiefs at a small feast to be given in their honour. During the course of this feast the chiefs are informed of the election of the Diwan. They are further told that the enthronement will take place on a certain day at Vumba Kuu.

Other gifts have to be sent to the elders of Mbayayi,⁴ Kirui,⁴ Muso,⁴ Mkumbi,⁴ Manza,⁴ Alene⁵ and Funzi,⁶ to the representatives of the twelve towns or tribes of Mombasa and Kilindini⁷ and, until lately, to the reigning chief of the Mazrui and to the Albusaidi Sultans of Zanzibar.

On the day appointed for the enthronement, the Diwan proceeds to Vumba Kuu, a road having been previously cut through the thick, tangled wood. He is led by the members of the Ba-Amiri and Mwenyi Chandi families (these people being the only persons permitted to enter the sacred precincts of the ruined city) to a small pile of stones, all that is left of what was once the grave of Mwana Chambi Chandi Ivor, the most powerful of the Sultans of Vumba.⁸ Here his feet are washed and he is crowned, *i.e.*, a worked skull-cap is placed on his head round which a turban is tied.⁹ He then tells the senior member of the Ba-Amiri family present, who has had the honour of crowning him, what name he wishes to be

¹ The chieftains of Vumba Kuu are believed to have all belonged to the Ba-Amiri or Mwenyi Chandi families.

² A silver chain worn above the right knee.

³ Like all other native tribes in this part of Africa, the Wadigo and Wasegeju are divided into clans, which clans are often subdivided into families.

⁴ Towns in German East Africa between Tanga and the Anglo-German frontier.

⁵ A town on the Pongwe creek. The inhabitants are called Wamwiyuni.

⁶ A town on the bay of Funzi. The inhabitants are called Wakifundi.

⁷ The Waswahili or natives of Mombasa and Kilindini are divided into twelve towns or tribes, viz. :—Mombasa (or Mvita), Mtwapa (or Mtwafi), Kilifi, Pate, Shaka, Paza, Akatwa (or Sonali), Gunya (or Bajun) and Junda (or Jomvu), Kilindini, Tangana and Changamwe.

⁸ I am informed that this grave, together with several others, was broken down by the employés of the German East Africa Company in 1896, in order that the stones might be used for building purposes at Jasin, one of their stations on the frontier. The natives say that bad luck will always follow the occupants of the house built from the stones of Vumba Kuu. A stone bearing an inscription, which was taken from these ruins, was sent by a former Governor of German East Africa, Major von Wissmann, to one of the Berlin museums.

⁹ This is called *kupiga kilemba*, to tie the turban.

called,¹ after which he is carried on a native bedstead, shaded by a large umbrella, to a place not far distant, where a great feast has been prepared, and where hundreds of expectant people are now assembled. The head of the Ba-Amiri next informs the chiefs of the Wadigo and Wasegeju that their Sultan has been crowned. These two men, in their turn, impart the news to all present, and, seizing a spear, each swears that he and his people will uphold their lord and master and defend him from all enemies. The great feast, called *Mshomara*, is then commenced, and two thousand ells of cloth (worth about two thousand rupees) are given to the Wadigo and Wasegeju elders. After the feasting has been kept up for some time, all the parties indulge in dancing to the accompaniment of the Sultan's musical instruments. These consist of two or three large drums, known as *ngoma kuu* and *goma*, several smaller ones, a long horn or *siwa* and two pairs of *matuwazi* or cymbals. After the dance the Sultan is carried home on the bedstead.

Wherever he goes he is now attended by slaves carrying the horn, a chair and the umbrella.²

If the Diwan's wife gave birth to a son, one more feast has still to take place. This follows shortly after the coronation festivities and is called *Kumbi la ada*, the feast of circumcision.

On the death of a Diwan there is a general mourning for forty days. During this period no Arab, Mswahili or native of Vumba may use more than one cloth to cover himself with; nobody may shave, nor may a cap or turban be worn. The house is watched from the outside by men, whilst the rooms are guarded by women. After fourteen days have elapsed, a great feast is given, and the Wadigo—especially the Birini clan—are permitted to take anything they like from the neighbouring plantations. As long as the feast lasts, a certain number of Wakifundi³ have to stand at the door of the house, and, as a sign that they are a conquered race, they may not complain if rice or other food is thrown or dropped on them.

But one more custom is worthy of mention. An Arab or native of Vumba when speaking to his sultan has to uncover and remain thus until he receives permission to again wear his cap and turban.⁴ The Diwan is always addressed as *Mwenyi* (Lord).

The first Sultan or Mwana Chambi of Vumba Kuu was nicknamed *Zumbura*. This, in the Kidigo⁵ dialect, means to find some thing or some place which is hidden, and is supposed to refer to the discovery of the Vumba

¹ As will be seen later on, the Sultans all had nicknames. These nicknames they gave themselves at this point in the ceremony.

² To the present day no native of Vumba, be he Mohammedan or heathen, may use an umbrella, except a crowned Diwan.

³ *Ante*, p. 279, note 6; also p. 282, note 7.

⁴ This custom is all the more remarkable as it is otherwise considered, here as elsewhere, a mark of disrespect to uncover.

⁵ The language of the Wadigo is called Kidigo; that of the Wasegeju, Kisegeju.

country. He is believed to have been enthroned *circa* 600 A.H. (1204 A.D.), and was buried, as were the six following chieftains, at Vumba Kuu.

Zumbura was succeeded by *Marikuona*. This word is believed to mean *Kuona Mali*, to find wealth.

The third Sultan was named *Kinena* (*mons veneris*). This is supposed to refer to his great strength.

Kinena was succeeded by *Hundekuu*. *Hunde*, in the Kidigo dialect, means some thing, the name of which is unknown, and *Kuu* is an adjective meaning great. The signification is, therefore, some great thing, the name of which is unknown.

After Hundekuu came *Mabua*. This word means stalks of Indian corn or millet, and the chieftain who gave himself this name is believed to have wished to convey the idea that, as during the harvest season, he would not only be content to gather in the corn but would even look after the stubble in the fields, so he would see to the wants of the least of his people.

His successor was *Niomvi*. This is the name of a small bird which lives in the rice fields.

The seventh Sultan of Vumba Kuu was *Mwenyi Chandi*¹ *bin Sheikh*. His father, Sheikh, who was a scion of a Mombasa family and hailed from the portion of that town known formerly by the name of Saalani, married a daughter of Mwana Chambi Niomvi. He did not change his name but was called Mwana Chambi Chandi. He lived to a great age and ruled well. After his death, the Sultans of Vumba were styled Mwana Chambi Chandi instead of Mwana Chambi, as heretofore.

Neither the name nor the real nickname of the next Sultan have been handed down to posterity. He is now known as *Mwana Chambi Chandi Mwenda na Wagalla*, *i.e.*, the chieftain who went to the Galla. At this time the Galla, a warlike tribe from north of the Tana river, are said to have overrun the whole country, and one day whilst the Sultan of Vumba Kuu was on his way to Gonja, a small town on the Umba river not far distant, he encountered a band of these savages. The Mwana Chambi Chandi himself and all his followers were slain.²

After a longer interregnum than usual, a successor was eventually chosen in the person of *Mwana Chambi Chandi Ivor*. This is not believed to have been the Sultan's real nickname, but is probably a name given him by a tribe of people called the Wakilio, who, having been driven from their own lands, were granted permission by the chieftain of Vumba to settle in his territory. In the dialect of these people, who, as has been already stated, are now known by the name of

¹ Chandi, in Kishwahili, is the old form for Mjumbe, an ambassador or messenger.

² In 1589 Mombasa was attacked by some 15,000 natives, called by the Portuguese historian Fr. Joás dos Santos *Zimbas*, and by P. Pierre du Jarrie *Imbiès*. These people came from south of the Zambesi river and on their march north devastated the town of Kilwa massacring 3,000 of the inhabitants (Strandes, p. 153). It is probable that the Vumba chieftain was killed by these savages and not by the Galla.

Wasegeju,¹ *Ivor* signifies an ivory ring which is worn round the right arm above the elbow.

For many years past there had been great friction between the people of Vumba Kuu and the inhabitants of the towns Mbayayi,² Muso,² Kirui,² Mkumbi,² Manjauli,³ Mwiuni,⁴ Mdragoni⁵ and Kifundi,⁶ who, descended as they were from the early Shirazi or Wadaburi settlers from Persia, refused to acknowledge the Sultans of Vumba Kuu as their over-lords.

Mwana Chambi Chandi Ivor, therefore, eagerly collected together the Wakilio and turned them into soldiers. By their help and by the assistance of the friendly Wadigo, he managed to vanquish the inhabitants of the eight towns mentioned above. As a sign of their defeat, these people were forbidden, for ever, to wear either sandals or turbans, to use umbrellas, to allow their women to veil their faces, to have solid wooden doors to their houses or to possess any other drum than that known as the "t'uṭ'u," which is so small that it can only be beaten by one hand. The Wakifundi, moreover, owing to their prolonged and stubborn resistance, were ordered to send some of their number, on the death of a Sultan of Vumba, to stand at the doors of the deceased's house.⁷

The majority of the conquered people, however, unwilling to accept peace on such degrading terms, left the towns of their birth and migrated elsewhere, some few to Jomvu, near Mombasa, whilst others went to Mtangata and Saadani and to other towns in what is now German East Africa. Those who remained had to comply with the terms of the peace, and these rules are observed by their descendants to the present day.

There are two large drums at Vanga which are believed to have been made at this time in commemoration of the victory over the eight towns. They are very massive and are grotesquely carved.

In 1630 A.D., about the time when Mwana Chambi Chandi Ivor sat on the throne of Vumba, the Portuguese at Mombasa were all massacred at the instigation of the Sultan of that town, named Yusuf (otherwise called Don Jeronymo Chingoulia), who, after being educated at Goa, had been converted to the Christian faith in 1627. Don Jeronymo seized the fort and successfully resisted

¹ *Ante*, p. 276, note 12.

² *Ante*, p. 279, note 4.

³ Manjauli is now called Manza. *Vide* p. 279, note 4.

⁴ Mwiuni is now called Alene. *Vide* p. 279, note 5.

⁵ Mdragoni was built near the spot where the Government station Shimoni now stands, on the mainland opposite Wasin town, and the ruins of a mosque are to be seen to the present day. The Wasegeju, who have a settlement hard by, have turned the site of the old town into a burial-ground.

⁶ Kifundi is now called Shirazi, and is situated a short distance up the Vikuarani stream, a rivulet entering Funzi Bay. In point of size it must have rivalled Vumba Kuu itself, and the ruins of stone mosques, wells, houses, walls and graves are still to be seen in a state of good preservation. The war between the Wavumba, *i.e.*, the people of Vumba, and the Wakifundi is said to have lasted seven years.

⁷ *Ante*, p. 280, note 3.

an attack on the part of the Portuguese under the command of Don Francisco de Moura, who, with a large fleet, anchored off Mombasa on the 10th of January, 1632. Before commencing operations, the Portuguese General, we are informed in "*Relação da perda e restauração de Mombaça do que lá aconteceu*," wrote to the "*King of Uumba, Mana Chamby Chandi*, a neighbour of Mombasa and a great enemy of the rebel," asking for aid. The help did not arrive, and Don Jeronymo, having captured two of the Portuguese vessels, dismantled the fort, burnt the city and escaped to Arabia.¹

Mwana Chamby Chandi Ivor was the last of the Sultans to be buried at Vumba Kuu. An enormous gravestone was erected over the spot where his remains were interred, and each succeeding holder of the office has been enthroned on this stone. Unfortunately, as has been already stated, this grave, together with others, was pulled to pieces some three years ago, and the place is now only marked by a few small heaps of hewn blocks.²

On the death of Mwana Chamby Chandi Ivor, Mwenyi Kae³ bin Mwenyi Musa ba-Amiri was elected sultan. He chose for himself the nickname of *Kitwa Kimoja*, i.e., one head. It is uncertain what meaning this is supposed to convey, and the following explanations have been given me for the name:— 1. That the sultan intended listening to and deciding all disputes himself; 2. That he was an only son; and 3. That he prophesied that he would be the last of the chieftains of Vumba Kuu.

Shortly after his election, Mwana Chamby Chandi Kitwa Kimoja had the misfortune to lose one of his sons, a boy named Mwenyi Pembe bin Sultan Mwenyi Kae. The child had gone to Wasin island with some fishermen and was playing on the beach when a Portuguese ship hove in sight. A boat was sent on shore, and the boy fearlessly approached the white men. On the sailors offering to take him on board, he went with them and was never seen again.

During the reign of this chieftain the whole country was overrun by a tribe called the Wadoe, cannibals, who hailed from near Dar-es-Salaam, the capital of German East Africa. On one occasion, they went as far as Mombasa, killing everybody who crossed their path and carrying off the flocks and herds. Amongst others who suffered from the raid of these savages were the relations and descendants of the late Mwenyi Chandi bin Sheikh, the first Mwana Chamby Chandi of Vumba. On their way home, the Wadoe stopped at Vumba Kuu but did no harm to the inhabitants and, having remained there a few days, they returned with their spoils to their own country.

A short while afterwards a report reached Mwana Chamby Chandi Kitwa

¹ Bibliotheca Nacional de Lisboa. Codice Manuscripto, No. 7640. An anonymous and undated work written about the middle of the seventeenth century. For further particulars concerning Don Jeronymo, *vide* Strandes, p. 209.

² *Ante*, p. 279, note 8.

³ Kae is an abbreviation for Abubakari. This Sultan's real name was Mwenyi Abubakari bin Mwenyi Musa ba-Amiri.

Kimoja that the relations and descendants of the late Mwenyi Chandi bin Sheikh, on hearing that the Wadoe had stopped at his town, had presumed that he and they were allies, and had decided to avenge themselves on the inhabitants of Vumba. Fearing an attack, the people left their homes and settled at Jimbo and at other fishing villages in the neighbourhood. Here they remained for some years, their houses, in the meantime, going to ruin.

Kitwa Kimoja died at Kigomeni and was buried at Bandani, a small wood near Vanga. With him died the last of the Mwana Chambi Chandi and the last of the chieftains of Vumba Kuu.

The next person selected to fill the honourable post of Sultan of Vumba was one Seyyid¹ Abubakari bin Sheikh el-Masela-ba-Alaui, a Shereef,² whose mother, Mwana Mkasi binti Mwenyi Musa ba-Amiri, was a sister of the late Mwana Chambi Chandi Kitwa Kimoja.³

Seyyid Abubakari chose for himself the nickname of *Ruga*, which, in the Kisegeju dialect, means the strength of a bull. He dropped the title of Mwana Chambi Chandi and assumed that of Diwan.

As the people of Vumba Kuu still feared an attack from Mombasa, many of them went, with Diwan Ruga at their head, to settle on Wasin island. Here they laid the foundations to a large city, which, a generation later, rivalled in extent and importance the former seat of the Sultans, Vumba Kuu.

The island of Wasin is some three miles in length, and, on the west side, about one mile in breadth. It is separated from the mainland by a channel which is three-quarters of a mile wide, and which forms one of the best harbours on the coast.

The origin of the word *Wasin* is lost in oblivion. The port was doubtless

¹ All descendants of the prophet, unless promoted through some act of their own or of an ancestor to the rank of "Sheikh," are addressed by the title Seyyid (Lord) or Sherifu (Shereef). These titles appear, in some instances, to form a part of a Shereef's name.

² Sultan Abubakari bin Sheikh's pedigree, as copied by his son, Omari, from a document brought from Mecca by one of his ancestors into Abubakari bin el-Fakihi Mwalimu Saleh's book, is as follows:—"Sultan Seyyid Abubakari, ibn Seyyid Sheikh, ibn Seyyid Abubakari, ibn Seyyid Omari, ibn Seyyid Abubakari Masela-el-ba-Alui (the first of this family to come to East Africa), ibn Seyyid Ahmed, ibn Seyyid Sheikh, ibn Seyyid Abubakari, ibn Seyyid Ali, ibn Seyyid Ahmed, ibn Seyyid Abdullah, ibn Seyyid Mohamed, ibn Seyyid Alui, ibn Seyyid Abdullah, ibn Sheikh Ali, ibn Sheikh Abdullah ba-Alui, ibn Sheikh Alui, ibn Seyyid Fakihi-Mohamed, ibn Seyyid Ali-Mkadam-Turuba, ibn Sheikh Mohamed-Sahebu-Marabati, ibn Sheikh Ali-Khali-el-Kasim, ibn Seyyid Alui, ibn Seyyid Mohammed, ibn Seyyid Alui (from whom the family received its surname), ibn Seyyid Abdullah, ibn Seyyid Ahmed, ibn Seyyid Isa, ibn Seyyid Mohamed, ibn Seyyid Ali el-Arthi, ibn Seyyid Jafer-Sadik, ibn Seyyid Mohamed el-Bakir, ibn Seyyid Zeina-el-Abidnia-Ali, ibn Seyyid Husein, ibn Ali (who married the Prophet's daughter Fatuma), ibn Abetwahib." The Prophet's pedigree is carried back some fifty other generations and eventually reaches Adam. As it is given at length in the Koran, it is unnecessary for me to record it here. The original pedigree which came from Arabia was burnt, I am informed, at Ormuz, in 1895.

³ Mwenyi Musa ba-Amiri had one other daughter, Mwandazi, who was married to Mwenyi Hija bin Mwenyi Husein, a grandson of Mwenyi Chambi bin Sheikh, the first Mwana Chambi Chandi of Vumba.

known to the first Asiatic mariners who navigated these waters, and, according to Drs. Tomaschek and Bitter,¹ a Christian priest, a descendant of one of the Syrian missionaries who settled on Socotra Island shortly after the death of Our Lord, journeyed about the year 550 A.D. to *Auxine* (Wasin), from whence he travelled to Taprobane (Ceylon). The name Wasin also appears in several ancient maps, notably in one published in 1554.

The Portuguese had no settlements there, but their ships occasionally paraded the coasts and sometimes called at the various towns. There are, at the present day, three towns on the island, Wasin proper, facing the mainland, Kunguni, a hamlet on the south side, built on the site of the fishing village of Mwana Chambi Chandi Kitwa Kimoja's time, and, on the eastern point, a settlement of Wakifundi.

The town of Wasin, although not so large as it was a century and a half ago, is still an important centre and has long been the chief market on the East Coast of Africa for *boriti* wood, obtained from the mangrove trees which abound in the neighbouring creeks. It contains several stone houses and three mosques; two of the latter were built some seventy years ago by Ahmed (nicknamed Mkulu) bin Mwenyi Mkuu el-Hasraji-el-ba-Urii, whilst the third was erected by Diwan Hasan (a son of Diwan Ruga), and was completed, as we are informed by an inscription carved by Sheikh bin Mwenyi Mui el-Hasraji-el-ba-Urii, on the birthday of Mwana Siti binti Diwan Hasan, the 23rd day of Auwal, 1162 A.H. (1749 A.D.). There are also the ruins of another mosque which was built by Kalaha, the agent at Wasin of Ahmed bin Mohamed, the Mazrui Governor of Mombasa from 1194 to 1229 A.H. (1780–1814 A.D.),² and of several other stone houses. One of the latter, which was formerly the property of Sheikh bin Mwenyi Husein (nicknamed Akida) ba-Amiri, is believed to have treasure buried beneath its floors.³

Fresh water is unobtainable on the island itself, although two wells were sunk in the soft coral rock by Diwans Hasan and Sheikh. All water required for drinking purposes has, in consequence, to be procured from the mainland immediately opposite Wasin town. This is done by means of water-tight boats, the rowers sitting in the water which is afterwards to be consumed.

There are numerous gravestones on the island, but, as none are dated, they are of little importance. Many of the memorial inscriptions, however, which are of some interest, have been irretrievably damaged by the chisels of vandalic china-hunters from our ships of war.⁴

Diwan Ruga, having established himself at Wasin, proceeded to amass great wealth, chiefly through trading with the interior for ivory and slaves. He thus

¹ *Die topographischen Capital des indischen Seespiegels Mohit*, p. 29 (Vienna, 1897).

² *The Story of Mombasa*.

³ Burton in his *Zanzibar*, vol. ii, page 110, whilst describing a visit to this island, says: "By way of revenge, I dropped a hint about buried gold which has doubtless been the cause of aching arms and hearts to the churls of Wasin." Is this the origin of the tradition?

⁴ It was formerly customary here, as elsewhere on the East Coast of Africa, to ornament the graves by fixing china dishes and plates into the stones.

became one of the best known Sultans on the coast, and after Mombasa had been re-occupied by the Portuguese in 1728 A.D., Conde da Ericeira D. Luiz (afterwards the first Marquez de Loureço), who was Viceroy of India from 1717 to 1720, mentions in his *Noticias da India desde o fim do Governo de Vice Rey Vasco Fernandez Cesar até o fim do anno de 1738 anque governa o Vice Rey Conde de Landemil*,¹ that the King of Vumba submitted together with other princes to the Mombasa Government. He writes as follows:—

“Dentro de poucos dias forão sogestar-se ao Governo dā Mombaça, Moinha Macombe, Rei de Oacone,² Mcameruruba, Rei de Mitangota,³ *Manachambe*, *Rei de Vumba*, Moinha Chambe,⁴ Rei de Tanga, Bensultan Manyá, Rei da Ilha de Pomba,⁵ e por Anfalumen Assane,⁶ Rei de Zanzibar, foi dar obediencia em seu nome seu filho Muinha Mocu.”

In another contemporary report the King of Vumba is called *Mana Chame*, and it is stated that he together with the other chieftains mentioned above went to Mombasa to pay homage to the Portuguese.

Diwan Ruga was thrice married and had issue by his wives fifteen children. He also had by concubines, twenty-five other children, twenty-three of whom are believed to have died in infancy or without issue. His first wife was his cousin, Mwana Musa binti Mwenyi Kae ba-Amiri (a daughter of Mwana Chambi Chandi Kitwa Kimoja). By her he had issue two sons, Seyyid Ibadi (nicknamed Miongo), the head of what was, at a later date, called “the Kigomeni family,” and Sheikh, who, according to the inscription on his grave, was buried at Kigomeni in 1202 A.H. (1787 A.D.).

Diwan Ruga's second wife, who lived at Wasin, was Mwana Jumbe binti Mwenyi Umanzi bin Sheikh el-Hasraji-el-ba-Urii of Ozi.⁷ She bore him twelve children, of whom her eldest son, Omari, died without issue on the sixth day of the seventh month, 1148 A.H. (1735 A.D.).⁸ The most important of her other sons were Hasan, afterwards Diwan, the head of what was called, at a later date, “the Wasin family”; Mwenyi Sagafu, who was buried at Kigomeni in 1201 A.H. (1786 A.D.);⁹ Idarus, who was considered a wizard, and at whose grave at Wasin, the Wadigo, in dry seasons, offer up prayers for rain; Alaui, the ancestor of the third and fourth Diwans of Wasin; and Kasim, who was the first person to settle on the plot of ground now called Vanga. The latter was greatly liked by the Mazaran, whom he accompanied when the governor of Mombasa, Ali bin Athman el-Mazru'i, attacked the native chieftain of Zanzibar. During this expedition

¹ Bibliotheca Nacional de Lisboa. Codice Manuscrito, No. 465.

² Is this Mdragoni? (*Ante*, p. 282, note 5.) According to tradition, all the inhabitants after the fall of this town in Mwana Chambi Chandi Ivor's reign went elsewhere, and it was allowed to fall into ruins.

³ Mtangata, a town some twenty miles south of Tanga, German East Africa.

⁴ Mwenyi Chambi. *Ante*, p. 277, note 4.

⁵ Pemba.

⁶ Mfalme Hasan. *Ante*, p. 277, note 4.

⁷ Ozi is a town not far from Lamu.

⁸ Abubakari bin el-Fakihi Mwalimu Saleh's book.

⁹ Memorial inscription.

Ali bin Athman himself was killed by his nephew Khalaf bin Khatibu bin Athman in 1167 A.H. (1754 A.D.) and was buried at Zanzibar.¹

Diwan Ruga's most renowned daughter was Mwana Siti (nicknamed Wa Mwana Chambi). She was married to Abubakari (nicknamed Bajios) bin Twahiri el-Jadid and thus became the ancestress of the Diwans of Vanga. This Mwana Siti binti Diwan Ruga was appointed, according to an old Vumba custom, judge in all matters in which the fair sex was concerned. These lady judges have been regularly elected ever since, and, on the death of one, another is chosen.

Diwan Ruga married thirdly a lady of Pemba, by whom he had issue one son, Sherifu Ibadi (nicknamed Mwenyi Pati).

Diwan Ruga died on the fourth day of the first month, 1155 A.H. (1742 A.D.),² and was buried at Wasin.

His second and eldest surviving son by Mwana Jumbe binti Mwenyi Umanzi el-ba-Urii, named Hasan, was aged about forty when Diwan Ruga died. The people of Wasin unanimously elected Shereef Hasan to fill the vacancy caused by his father's death, and he was enthroned at Vumba Kuu in 1157 A.H. (1744 A.D.).³ Owing to his name meaning blessed, he did not change it; he is thus known as Diwan Hasan.

The inhabitants of Kigomeni, at the instigation of the head of the Ba-Amiri, Mwenyi Mkuu bin Sultan Mwenyi Kae (the eldest son of Mwana Chambi Chandi Kitwa Kimoja) refused to acknowledge Diwan Hasan and wished to appoint, in his stead, his half-brother Seyyid Ibadi (nicknamed Miongo) bin Diwan Ruga. The latter certainly had a better claim, if it was a question of hereditary rights, owing to his mother being a daughter of Mwana Chambi Chandi Kitwa Kimajo, but he declined becoming Hasan's rival. Mwenyi Mkuu and his followers at Kigomeni, however, still rejected the choice of the people of Wasin, and now selected a member of another branch of the Ba-Alaui family, Sherifu Ali bin Abubakari, as their representative. The table⁴ on p. 288 will show his relationship to Diwan Hasan.

Sherifu Ali bin Abubakari el-ba Alaui was duly enthroned at Vumba Kuu and took the name of *Maere*, which means clear weather after the storm. Thus, there was one Diwan at Wasin and another at Kigomeni.

The latter, after holding office for ten years, died on the 24th day of Rajiabo, 1168 A.H. (1755 A.D.).⁵ Both he and his patron, Mwenyi Mkuu bin Sultan Mwenyi Kae were very poor, and no money was forthcoming to pay for the ordinary funeral feast. Mwenyi Mkuu at last decided to compromise with Diwan Hasan and promised, if the latter would pay for the feast to be held in honour of

¹ *The Story of Mombasa.*

² Abubakari bin el-Fakihi Mwalimu Saleh's book.

³ *Ibid.*

⁴ This pedigree and the dates are taken from Abubakari bin el-Fakihi Mwalimu Saleh's book.

⁵ Abubakari bin el-Fakihi Mwalimu Saleh's book,

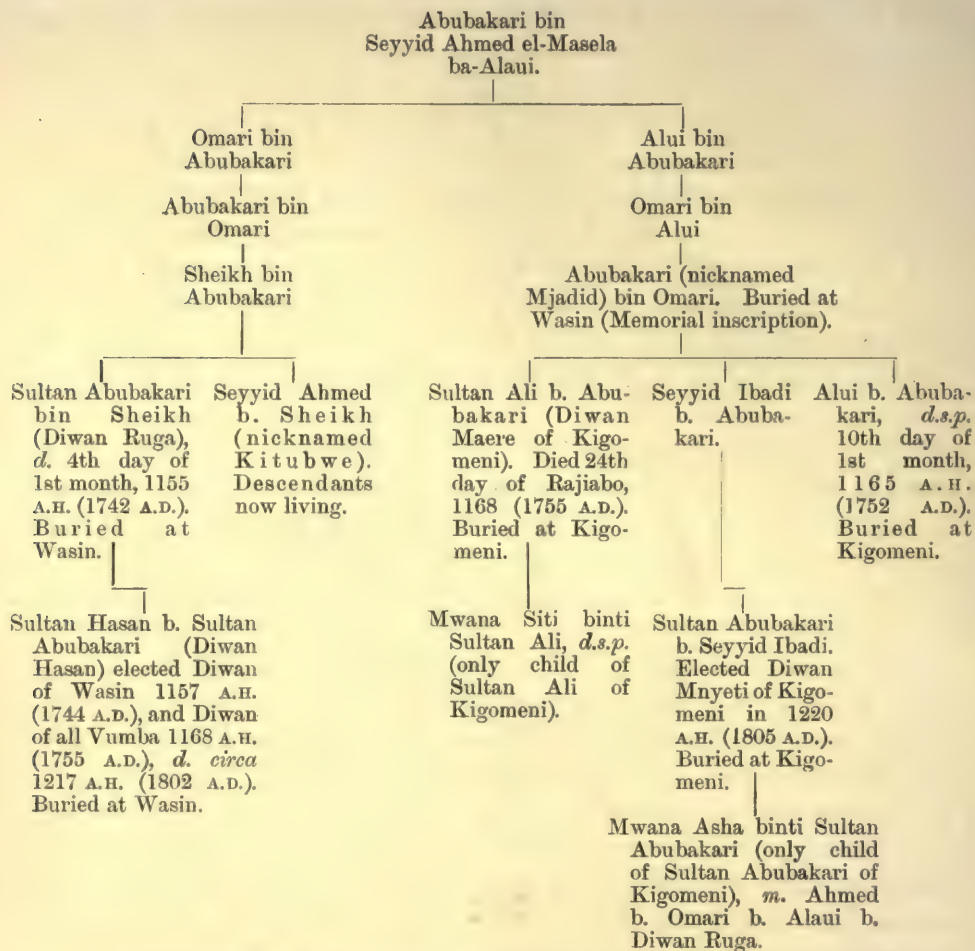


TABLE SHOWING THE RELATIONSHIP BETWEEN DIWAN HASAN AND SHERIFU BIN
ABUBAKARI EL-BA-ALAU.

the death of his late rival, that he (Diwan Hasan) would alone be acknowledged as Sultan from Kwāle to Likoni. Diwan Hasan accepted the offer and paid for and was present at Diwan Maere's funeral feast, after which he returned to Wasin and reigned as Sultan of Vumba until his death in *circa* 1217 A.H. (1802 A.D.).

Diwan Hasan paid several visits to his mother's relatives at Ozi, and on one occasion was presented with an ivory horn (*siwa*). This horn, which weighs about sixty pounds, is still in the possession of the people of Vanga.

During the latter years of his life, Diwan Hasan was, owing to his great age, quite incapable of performing any of the duties of his office, and his eldest and only surviving son, Abubakari bin Sultan Hasan, who was born on the twelfth day of the third month, 1148 A.H. (1735 A.D.),¹ acted in his stead.

¹ Abubakari bin el-Fakihi-Mwalimu Saleh's book.

Diwan Hasan married four times. His best known sons are Seyyid Ahmed, who was born on the 27th day of the 6th month, 1149 A.H. (1736 A.D.),¹ and Sherifu Ali, who was buried at Kigomeni in 1200 A.H. (1785 A.D.).²

On the death of Diwan Hasan, his son Abubakari was unanimously chosen as his successor and was duly invested with the *vunda*.³ Before he could be enthroned at Vumba Kuu, however, Sherifu Abubakari was taken suddenly ill and died.

A Shereef, named Sheikh Hasan bin Salim min⁴-Ali-Sheikh-Abubakari-bin Salim-el-Mansabi,⁵ who, by his mother, a daughter of Diwan Hasan, was a great-grandson of Diwan Ruga, and who had married a daughter of the late Seyyid Abubakari bin Diwan Hasan, was accused by his enemies of having killed his father-in-law by witchcraft in order to be chosen Diwan himself. Be that as it may, Sheikh Hasan bin Salim obtained a portion of the wealth left by Diwan Ruga, to the exclusion of the lawful heirs, was elected Diwan and was eventually enthroned at Vumba Kuu. He chose for himself the name of *Sheikh* (pronounced Shehe) in memory of his ancestor Sheikh Abubakari bin Salim el-Mansabi, who, in his time, was a great and learned man.

Some of the people of Kigomeni again opposed the choice of their relations of Wasin, and the more wealthy of them collected a sum of money and appointed the nephew of the late Diwan Maere, by name Abubakari bin Seyyid Ibadi el-ba-Alaui, who had been earning a precarious livelihood in Zanzibar, as their Sultan. Great friction was thus once more caused between the inhabitants of these two towns, and all the supporters of Diwan Sheikh living at Kigomeni were obliged to quit their homes and settle on the island of Wasin.

This, too, formed a fresh pretext for the Wadigo to enter on a civil war—a no very uncommon matter with that tribe—and their chief, named Kubo Mwakikonga of the Mohindzano or Kinangala clan, enraged at the people of Kigomeni asking his underling, Mwana Moki Mwabubu of Kilulu⁶ for an escort to take them to Vumba

¹ Abubakari bin el-Fakihi Mwalimu Saleh's book.

² Memorial inscription.

³ *Ante*, p. 279, note 2.

⁴ *Min* is equivalent to "of the family of."

⁵ Sheikh Hasan's pedigree, according to Abubakari bin el-Fakihi Mwalimu Saleh's book is as follows:—"Sultan Hasan, ibn Sheikh Salim, ibn Sheikh Ahmed, ibn Sheikh Nasir, ibn Sheikh Ahmed, ibn Sheikh Salim, ibn Sheikh Ahmed, ibn Sheikh Abubakari, ibn Sheikh Salim, ibn Sheikh Abubakari, ibn Sheikh Ahmed, ibn Ali, ibn Sheikh Abubakari, ibn Salim." Sheikh Abubakari ibn Salim's pedigree, I am informed by the Sheikh-ul-Islam, or chief Cadi for the East Africa Protectorate, is as follows:—"Sheikh Abubakari ibn Salim, ibn Abdurahman (Segafu), ibn Mahomed (Maul-Abduliwa), ibn Ali, ibn Alui, ibn Mahomed, ibn el-Fakihi Makadam, ibn Ali, ibn Mahomed Sahebu-Marabati, ibn Ali, ibn Alui, ibn Mahomed, ibn Alui, ibn Abdullah, ibn Ahmed, ibn Isa, ibn Mahomed, ibn Ali, ibn Jafer, ibn Mahomed, ibn Husein, ibn Ali (who married the Prophet's daughter Fatuma)." It will be noticed that, with the exception of Zeina-el-Abidnia-Ali, this pedigree coincides for some generations with that of the Ba-Alaui family.

⁶ Kilulu is a hill, 900 feet high, on the sea coast, ten miles south of Jasin. Mwana Moki had stones carried to the top of this hill and there built himself a house. After his death he

Kuu, attacked the new Diwan's party while on its way to the enthronement, killing several of its members and forcing the Diwan himself to fly for his life.

Some days later, however, chiefly through the intercession of his rival, Diwan Sheikh, Seyyid Abubakari bin Seyyid Ibadi el-ba-Alaui was enthroned at Vumba Kuu and chose for himself the name of *Mnyeti*, meaning Patience.

On the 23rd of the seventh month, 1236 A.H. (1821 A.D.),¹ war was declared between Seyyid Said bin Sultan, the fourth Albusaidi Imam of Muscat, and the Mazrui governor of Mombasa, Abdullah bin Ahmed, who, on his accession in 1229 A.H. (1814 A.D.),² had despatched to his lord, instead of the customary presents, a mail shirt, a flask of powder and a wooden spoon. After Pate had fallen before the Arab invaders, the island of Pemba was threatened. On hearing of this, Diwan Sheikh thought it would be wiser to leave Wasin until hostilities should be at an end, so he went with all his adherents to the mainland. Some of the people, including the Diwan himself, settled at Vanga—then only a small fishing village—whilst others went to live at the various towns along the coast.

Shortly after the evacuation of Wasin, one of Seyyid Said bin Sultan's generals, Amiri Ahmed bin Mahomed, called at the island on his way to Pemba, and, presuming that the deserted town which he found there belonged to the enemy, he destroyed all the houses and other buildings, leaving untouched only the mosque built by Diwan Hasan.

Diwan Sheikh did not long survive his change of residence. He died in the first year after Suliman bin Ali had been chosen Governor of Mombasa³ (1239 A.H. or 1824 A.D.), and was buried at Bandani, near the grave of Mwana Chambi Chandi Kitwa Kimoja.

Diwan Mnyeti had predeceased Diwan Sheikh and had been buried with his uncle, the late Diwan Maere at Kigomeni.

Owing to the English having placed Mombasa under their protection,⁴ there was now no longer any fear of Seyyid Said attacking Wasin, and the people, with the exception of those who had gone to Vanga, returned to their homes and rebuilt their houses. Those who had followed the late Diwan to Vanga remained at that town.

Some dispute arose between the latter and the people of Wasin as to where the feast to be given in honour of Diwan Sheikh's death should be held, each party advocating its own town. The former had the better of the argument, and the feast was consequently prepared at Vanga.

was buried with five of his brothers on the summit, and his grave can be seen to the present day. Mwani Moki belonged to the Kombo family of the Dziribe clan.

¹ *The Story of Mombasa.*

² *Ibid.*

³ Abubakari bin el-Fakihi Mwalimu Saleh's book. According to *The Story of Mombasa*, Suliman bin Ali el-Mazrui was chosen governor of that town in 1238 A.H. (1823 A.D.).

⁴ Sir Arthur Hardinge in his *Report on the condition and progress of the East Africa Protectorate from its commencement to the 20th July, 1897*, writes, "Suliman bin Ali placed himself under the protection of Captain Owen of H.M.S. 'Barraconta,' in 1823. The British Government, however, repudiated the Protectorate, which was withdrawn two years later."

According to an old custom, it is necessary for all the relations of a deceased Sultan of Vumba who intend taking part in the funeral feast given in his honour to be present when a certain ox is slaughtered, and if the ox is slaughtered whilst any one is absent, it is considered as an insult to the absentee. The ox, which is always the largest that can be procured, is first of all given a name. On the present occasion it was called "Mjaka wa Chandi."

On the day appointed, one Seyyid Ahmed bin Alaui bin Sultan Abubakari (a grandson of Diwan Ruga) purposely absented himself from the revels, and the ox was slaughtered before he arrived. When he appeared upon the scene, he called upon all present to witness the insult which had been offered him and returned to Wasin without taking part in the feast. He was followed by most of the Ba-Alaui and Ba-Amiri and was shortly afterwards proclaimed Diwan. The Vanga people, however, refused to acknowledge him and wished to appoint Sheikh Nasir bin Sultan Hasan (a son of the late Diwan Sheikh) as his father's successor, but the latter, now an elderly man,¹ did not desire the honour and proposed a Shereef, named Seyyid Ahmed bin Abubakari (Dani) bin Abubakakari (Bajios) bin Twahiri bin Ahmed bin Husein el-Jadid, the son of his father's half-sister, Mwana Alaui binti Mfalme Bakiri of Zanzibar, and the great-grandson as well as the great-great-grandson of Diwan Ruga.²

As there was now an open breach between the inhabitants of Wasin and Vanga, and matters began to look serious, it was decided that the whole case should be referred to the Mazrui Governor of Mombasa, Suliman bin Ali.

At first, the judge favoured the suit of Seyyid Ahmed bin Alaui, but seeing that the Vanga people absolutely refused to acknowledge him and that Sheikh Nasir bin Diwan Sheikh had inherited some of Diwan Ruga's great wealth together with the articles appertaining to the Diwan's office, he decided that both Seyyid Ahmed bin Alaui and Seyyid Ahmed bin Abubakari should be elected Diwan. Thus, the houses el-ba-Alaui and el-Jadid were represented respectively at Wasin and Vanga.

The former Diwan named himself *Kikambala* and the latter *Pinda*. The meaning of *Kikambala* in the Kidigo dialect is tether. Seyyid Ahmed bin Alaui called himself thus in order to show that, as an ox could be fastened by a piece of cord, so would he be tied to his post by duty. The meaning of *Pinda* is to bend a bow preparatory to shooting an arrow. Seyyid Ahmed bin Abubakari's idea in giving himself this name was to make the people think that he was always ready to receive an enemy.

Both men were much respected, but, of the two, the Wasin Diwan had the greater influence over the Wasegeju and Wadigo, which latter tribe, under the warlike chief Kubo Mwakikonga, was now in the zenith of its power. Diwan

¹ According to Abubakari bin el-Fakihi Mwalimu Saleh's book, Sheikh Nasir was born on the 19th day of the 5th month, 1189 A.H. (1775 A.D.). He was therefore fifty years of age when the above recorded event happened.

² *Ibid.*

Pinda was considered a great wizard and medicine-man and was much favoured by the Mazaran, with whom he spent the half of each year.

As the Vanga Diwan had inherited the drums of Mwana Chambi Chandi Ivor (*vide* p. 282) and the ivory horn of Diwan Hasan (*vide* p. 288), the people of Wasin had three large drums and a long wooden horn made.

In 1241 A.H. (1826 A.D.) Salim bin Ahmed el-Mazrui deposed his cousin Suliman bin Ali,¹ and on the 23rd day of the 5th month, 1243 A.H. (1828 A.D.),² he was obliged to surrender the fort at Mombasa to the Muscat Prince, Seyyid Said bin Sultan. He was, however, permitted to remain as hereditary governor of the town and to retain one half of the revenues. When Seyyid Said had once obtained possession of the fort, which he placed under the charge of a Jemidar,³ named Shoho, he broke his pledge to the Mazaran and appointed Nasir bin Seliman bin Kasim Ismaili Governor of Mombasa. Incensed by this breach of faith, Salim bin Ahmed attempted unsuccessfully to poison his enemy's representative, who thereupon retired to the fort.

One of the Imam's generals, Alimas hadim⁴ Seyyid Said, was sent from Zanzibar to recover the town of Mombasa, which had been seized by the Mazaran, and to succour the inmates of the fort, who were in such straits for want of food that they were reduced to eating rats.⁵ On his way thither, Alimas stopped at Wasin and signed a treaty of peace with Diwan Kikambala. Noticeing some cown shells on the sea-shore which belonged to his enemy, Salim bin Ahmed, Alimas begged the Diwan to allow him to take them away with him to use against their owner instead of shot. Diwan Kikambala, possibly glad of an opportunity to avenge himself on the patrons of his rival, readily agreed, and three *gizlahs* (1080 lbs.) of the shells were put on board the Zanzibar boats before Alimas set sail for Mombasa.

On the conclusion of peace between the Mazaran and the Muscat Arabs in 1249 A.H. (1833 A.D.),⁶ the Diwan of Wasin was told that Salim bin Ahmed was angry with him for the part he had played in handing over the cown shells to Alimas, and he was advised to go to Mombasa and wait on the Governor. He therefore went, accompanied by a large following of Arabs and, as a hint, attended by a small body-guard of Wadigo and Wasegeju.

Salim bin Ahmed, fearing to do anything to him openly, on account of his influence over the natives, received him well, and great festivities were given in his honour.

On the day before Diwan Kikambala intended returning to Wasin he was taken slightly ill, and Mahomed bin Ahmed, Salim's brother, gave him some medicine. Shortly after he had drunk the concoction, he became much worse and expired in a few hours. He was buried in the grave-yard, called "Kwa Masheikh," in the "Mji wa kale" portion of Mombasa.

¹ *The Story of Mombasa.*

² A jemidar is a native subaltern officer.

³ *The Story of Mombasa.*

⁴ *Ibid.*

⁵ The meaning of *hadim* is "the slave of."

⁶ *Ibid.*

Having ridded himself thus successfully of his enemy, Salim bin Ahmed thought it advisable to disperse the relations of the deceased. In consequence, he ordered them to return to their homes, to break down their houses and to go and live on the mainland. This they did, remaining at Vanga and at other coast towns till the final capture of Mombasa by Said bin Sultan, who treacherously seized Rashid bin Salim, a son and successor of Salim bin Ahmed, and sent him with twenty-four of his relations to starve in the dungeons of Bunder-Abbas,¹ when the Wasin people again took up their abode on the island.

In the meantime, Diwan Pinda had quarrelled with the Mazaran, owing to their brutal treatment of one of the Mwenyi Chambi of Tanga,² and had joined their enemy, Seyyid Said bin Sultan, at whose court he now spent the greater part of his time. He twice accompanied the Sultans of Zanzibar to Siu,³ being present at the defeat of Seyyid Said's forces by the chieftain Mataka, and later, at the bombardment and taking of that town by Seyyid Majid bin Said. Diwan Pinda also twice visited the chieftain of Usambara,⁴ by name Kinweri, at the latter's capital, Vuga. Although he rarely stopped at Vanga, the Diwan put that town in a state of defence by encircling it with a stone wall.⁵

In 1275 A.H. (1858 A.D.) the country was visited by cholera. According to the diary of one Abubakari bin Kasim bin Mwalimu Twahiri el-Jadid, no fewer than two hundred and sixty-two persons died of this disease at Wasin in thirty-seven days.

Vanga was attacked in 1276 A.H. (1859 A.D.) by a horde of Masai, a war-like and nomad tribe inhabiting the plains between Kilima Njaro and Victoria Nyanza. Although at first repelled, they returned in greater numbers than before and finally forced the inhabitants to take shelter at Kigomeni. The invaders did but little damage to the town and contented themselves with driving off the cattle.

Sultan Ahmed bin Abubakari el-Jadid, otherwise called Diwan Pinda, died at Vanga in 1280 A.H. (1863 A.D.) and was buried at Bandani.

On the return of the Wasin people to the island home of their ancestors in 1253 A.H. (1837 A.D.), they decided to elect a successor to Diwan Kikambala. The choice fell on Seyyid Ahmed bin Nasir bin Alaui bin Diwan Ruga, who, however, died before he could be enthroned. His brother, Seyyid Alaui bin Nasir bin Alaui

¹ This event took place, according to an inscription in the Friday Mosque of Hamis Mohamed Ali Rokbesh in Mombasa, on the 20th day of the 3rd month, 1253 A.H. (1837 A.D.).

² *Ante*, p. 277, note 4.

³ *Ante*, p. 277, note 2.

⁴ Usambara is the name given to the highlands at the back of Tanga, German East Africa. On the slopes there are now numerous coffee plantations. As a safeguard against attack, the natives build their villages in the middle of its densest woods, or on the summits of its highest hills.

⁵ This seems to be the unanimous statement of the inhabitants of Vanga, but Sir Arthur Hardinge in his *Report on the condition and progress of the East Africa Protectorate from its commencement to the 20th July, 1897*, writes, "Vanga (in 1894) was surrounded by a stone wall said to date from the Portuguese times, portions of which are still in existence."

bin Diwan Ruga, was then chosen in his stead. The latter, I am told, was a fine, handsome man with a long flowing beard; but, shortly after his election, he had the misfortune to become totally blind. The superstitious natives attributed both the death of Seyyid Ahmed bin Nasir and the blinding of his brother to the sorcery of Diwan Pinda; and this idea took such a firm hold on the minds of the people that it was decided to await the Vanga chieftain's death before Seyyid Alaui bin Nasir should be enthroned. In the first month of 1281 A.H. (1864 A.D.) Seyyid Twahiri bin Abubakari (Dani) el-Jadid, who had been chosen by the people of Vanga to succeed his brother, the late Diwan Pinda, was enthroned together with Seyyid Alaui bin Nasir el-ba-Alaui at Vumba Kuu. The Diwan of Wasin chose the name of *Ukungu*, meaning dawn, and the Diwan of Vanga that of *Kilimia*,¹ meaning the Pleiads. The former thus likened the long interregnum which had followed Diwan Kikambala's death to a tropical night, whilst the latter wished to show that, as the Pleiads are invisible for a short period during the year, so the people of Vanga had not been long without their chief.

The only work of note performed by Diwan Kilimia was to improve the wall built by his brother round the town of Vanga.

During the month of Ramathan, 1286 A.H. (December, 1869), a terrible wave of cholera again passed over the land. Four hundred and thirty persons died in fourteen days at Vanga and Wasin, amongst them the Diwan of Vanga himself, Sheikh Kasim bin Abdullah el-Menthiri (Diwan Kikambala's Cadi) and eighty-two Arabs, of whom ten were virgins.² The Diwan, who died on the tenth of the month, was buried at Bandani.

In 1288 A.H. (1871 A.D.) Seyyid Ahmed bin Sultan Twahiri el-Jadid, a son of Diwan Kilimia, was selected by the people of Vanga to succeed his father. He chose for himself the name of *Marithia* (a corruption of *Marithawa*, which means plenty), as a prediction that, so long as he lived, there would be no famine in the land. He is, however, better known by his former nickname *Shukue*, which is a corruption of *Chukua*, and means take.

Diwan Ukungu of Wasin died in 1295 A.H. (1878 A.D.) and was buried with great pomp in the grave of his ancestor Diwan Ruga. In 1300 A.H. (1883 A.D.) a successor was chosen in the person of Seyyid Nasir bin Alaui bin Diwan Kikambala, who, however, died on the 22nd of the 4th month, 1302 A.H. (February, 1885 A.D.),³ before he had been enthroned at Vumba Kuu. No other successor to Diwan Ukungu has since been chosen, and the drums, silver chain, wooden horn and

¹ *Kilimia* means literally "that by which to cultivate." The Pleiads are not seen for two or three weeks in May or June, and their reappearance marks the commencement of the Indian corn and millet harvests. The following is a common native proverb:—"Kilimia kiki-zama kwa jua huzuka kwa mvua, kikizama kwa mvua huzuka kwa jua," or "When the Pleiads set in sun, *i.e.*, in sunny weather, they rise in rain; when they set in rain, they rise in sun." (Taylor: *African Aphorisms*.)

² Numbers, date and particulars taken from the diary of Abubakari bin Kasim bin Mwalimu Twahiri el-Jadid.

³ Entry in Nasir bin Alaui's Koran made by his son Alaui bin Nasir.

umbrella, etc., pertaining to the office of Diwan of Wasin are now in the possession of Seyyid Alaui bin Nasir bin Alaui bin Diwan Kikambala bin Alaui bin Diwan Ruga, the Government Arabic clerk at Shimoni.

After the death of Seyyid Nasir bin Alaui bin Diwan Kikambala, the members of the Ba-Alaui family at Wasin were continually quarrelling as to who had the best right to be elected Diwan, and, in the years 1310 and 1311 A.H. (1892 and 1893 A.D.), assaults and disturbances of all kinds were of frequent occurrence. The I.B.E.A. Company's District Superintendent at Shimoni, tired at length of warning, ordered on one occasion, seven Shereefs to receive twenty-five lashes each. This sentence had the desired effect so far as the Company's officials were concerned, but it is probable that no Diwan of Wasin will ever again be chosen, so heartily do the rivals now hate one another.

Troublous times followed the election of Diwan Mirithia. Shortly after his succession, Sheikh Mbaruk bin Rashid el-Khelani-el Mazrui of Gasi sent him a haughty message demanding a free woman of Vanga as wife. The people refused and asked for and obtained aid from Sultan Barghash bin Said of Zanzibar. Sheikh Mbaruk attacked Vanga but was repelled with loss.

In 1302 and 1303 A.H. (1884 and 1885 A.D.) the country was stricken by famine, contrary to the Diwan's prediction, and thousands of the natives died.

In 1304 A.H. (1886 A.D.) Sheikh Mbaruk bin Rashid rebelled for a second time against the authority of the Sultan of Zanzibar, and remembering his defeat some years before at the hands of the people of Vanga, he surprised that town and burnt and sacked it. The Diwan and most of the inhabitants fled to Manza, in German East Africa, where they remained until Sheikh Mbaruk was eventually compelled by General Mathews to make his submission at Zanzibar to Seyyid Barghash.

On July 24th, 1895, Sheikh Mbaruk again attacked and burnt Vanga.¹ One of his generals, Ali bin Abdullah el-Mazrui, at the same time seized as hostages the persons of the Diwan and his Cadi (the present Liwali of Vanga) and sent them, under a small escort, to the Mazrui fortress at Mwele.² On the road they stopped for the night at Miongoni, on the Umba river. The Mligo elder of this village, one Myuno of the Mwiyo clan, remained true to the oath taken by his chief at the Diwan's enthronement. He beat his war-drums, collected a large number of his tribesmen and rescued the prisoners, who escaped to Kwale in German territory, where they remained till hostilities were at an end.

Diwan Marithia, who during the last few years of his life was recognised as Diwan of all Vumba, died childless on the 6th day of the 6th month, 1315 A.H.

¹ *Vide* Blue Book, Africa, No. 6 (1896), p. 12.

² Mwele is a hill, lying at the southern end of the Shimba group, twenty miles to the west of Gasi. From its summit a wonderful view can be obtained, the snow-covered heights of Kilima Njaro, surmounting a long expanse of plain studded with isolated peaks, being visible on the one side, whilst, from the opposite slope, can be seen the whole coast line, the Indian Ocean, and in the distance the Island of Pemba.

(August 8th, 1897), and was buried at Bandani. In accordance with a proclamation issued by the Sultan of Zanzibar, Seyyid Ali bin Said, on the 1st of August, 1890, the late Diwan's slaves—ninety-six in number—were all set at liberty.

Since Diwan Marithia's decease no one has, as yet, been chosen to succeed him. There are, however, two claimants, viz. :—his brother, Sherifu Abubakari bin Diwan Kilimia el-Jadid and Sherifu Nasir bin Hasan bin Hasan bin Abubakari bin Seyyid Ahmed bin Diwan Ruga el-ba-Alaui, whose mother was Fatuma binti Diwan Kilimia, but neither of these persons have sufficient means wherewith to pay for the various feasts necessary before the election can take place. A rumour is being circulated that a woman, Mwana Shasha binti Diwan Kilimia, a wife of the Cadi of Wasin, Sheikh Rashid bin Kasim el-Menthiri, is also anxious to become Diwan; notwithstanding this lady's high position and great wealth, however, she has received but feeble support from the electors. Nevertheless, it is to be hoped that the ancient title will not be allowed to fall into complete abeyance, but that some duly qualified candidate may yet be chosen to make once more the time-honoured journey to the ruined city in the wood and thence return a crowned Diwan of Vumba.

NOTES ON THE PEDIGREE OF THE DIWANS OF VUMBA.

Plate XXIX.

1. Author of book in which the records of Vumba Ndogo were kept. This book was finished on the 7th of the 3rd month 1133 A.H. (1721 A.D.) after mid-day prayer.
2. Elected 1st Diwan of Vumba *circa* 1124 A.H. (1712 A.D.). Nicknamed Ruga. Died 4th of 1st month 1155 A.H. (1742 A.D.). Buried at Wasin.
3. Elected 1st Diwan of Kigomeni, 1158 A.H. (1745 A.D.). Nicknamed Maere. Died 24th of Rajiabo 1168 A.H. (1755 A.D.) buried at Kigomeni.
4. Father of Abubakari bin Ibadi, who was elected 2nd and last Diwan of Kigomeni in 1220 A.H. (1805 A.D.). Nicknamed Mnyeti. Died before 1239 A.H. (1824 A.D.) and buried at Kigomeni.
5. Died 10th of 1st month 1165 A.H. (1752 A.D.). Buried at Kigomeni.
6. Born *circa* 1117 A.H. (1705 A.D.). Elected 1st Diwan of Wasin in 1157 A.H. (1744 A.D.), and 2nd Diwan of Vumba in 1168 A.H. (1755 A.D.). Nicknamed Hasan. Died *circa* 1217 A.H. (1802 A.D.). Buried at Wasin.
7. Born the year Hasan bin Diwan Ruga chosen Diwan of Wasin (1157 A.H. or 1744 A.D.).
8. Elected 3rd Diwan of Wasin in 1239 A.H. (1824 A.D.). Nicknamed Kikambala. Poisoned at Mombasa in 1249 A.H. (1833 A.D.). Buried in Mombasa.
9. Born 12th day of the 3rd month 1148 A.H. (1735 A.D.). Elected Diwan but died *circa* 1217 A.H. (1802 A.D.) before he was enthroned. Buried at Wasin. Issue several children.
10. Elected Diwan of Wasin but died, before he was enthroned, in 1253 A.H. (1837 A.D.). Buried at Wasin.
11. Elected 4th and last Diwan of Wasin in 1253 A.H. (1837 A.D.) Enthroned 1st month 1281 A.H. (1864 A.D.). Nicknamed Ukungu. Died 1295 A.H. (1878 A.D.). Buried at Wasin.
12. Issue several children. Buried at Wasin. One of his sons, Nasir bin Alaui, was elected Diwan of Wasin in 1300 A.H. but died, before he was enthroned, in 1302 A.H. (1885 A.D.).

13. Issue several children. Buried at Wasin.
14. Elected 2nd Diwan of Wasin, *circa* 1218 A.H. (1802 A.D.). Died in 1239 A.H. (1824 A.D.). Buried at Bandani near Vanga. Nicknamed Sheikh. No descendants living.
15. Elected 2nd Diwan of Vanga in 1280 A.H. and enthroned 1st month of 1281 A.H. (1864 A.D.). Died 10th day Ramathan 1286 A.H. (1869 A.D.). Nicknamed Kilimia. Buried at Bandani near Vanga.
16. Elected 1st Diwan of Vanga 1239 A.H. (1824 A.D.). Nicknamed Pinda. Died 1280 A.H. (1863 A.D.). Buried at Bandani near Vanga. Descendants living.
17. Living at Tanga, German East Africa. Candidate for the office of Diwan of Vumba.
18. Elected 3rd Diwan of Vanga in 1288 A.H. (1871 A.D.). Nicknamed Marithia. Acknowledged as 3rd Diwan of Vumba after 1311 A.H. (1893 A.D.). *D.s.p.* 6th of 6th month 1315 (August 8th, 1897). Buried at Bandani, near Vanga.
19. Said to be candidate for the office of Diwan of Vumba.
20. Her son, Nasir, is a candidate for the office of Diwan of Vumba.

[EDITORIAL NOTE.—We are indebted for the MS. of this valuable paper to the kindness of the Foreign Office; in tendering our thanks we should like to point out how much Government servants, both in the colonies and in foreign countries, could do for Anthropology if their attention is once directed to the scientific and political importance of close observation of the races with whom they are brought in contact.

It has not been found possible to publish all the genealogical material; the unpublished MSS. are accessible to students, and can be examined in the Library of the Institute.]

VUMBA - EAST AFRICA



VUMBA KUU - EAST AFRICA





From a drawing by A.C. Hollis

B. V. Darbishire & O. J. R. Howarth

Engl Miles 0 5 10

Oxford 1901

THE NEIGHBOURHOOD OF VUMBA.

(The central part of the upper map on Plate XXVII: on a larger scale.)

UNCLASSIFIED WORKED FLINTS.

BY H. STOPES.

[PRESENTED MAY 15TH, 1900. WITH PLATES XXX, XXXI, XXXII, XXXIII, XXXIV, XXXV.]

THE number of worked stones still surviving is very great. A considerable proportion have been saved from destruction by those acquainted with their value, and the number of men interested in the generally recognised forms is rapidly increasing. So we may confidently look forward to very considerable accessions to all our museums and other collections.

The interest in these stones is being awakened by so many thinkers recognising the fact that in them we have the sole surviving evidence of man's condition for by far the larger part of the long period during which he made tools, or used as instruments the stones he found adapted to his needs.

Of the countless ages during which tools (if they may be so called, and it is difficult to see why they should not) were used, but not intentionally fashioned, the stones themselves are the only surviving evidence we yet have, or may hope to procure for some time to come. Later, when our eyes and perceptions are trained to see and understand more than we now do, much evidence, hidden from us now, will be revealed, and we shall intelligently learn a good deal concerning our forefathers from the indications of wear still left on the stones they used.

Meanwhile, of the evidence, which we have and partially understand, too little use is made because we are fettered by prejudice, or cannot shake off our mental inertia.

Many of the views held until quite recently, and some also which we still cherish, are not in accordance with facts even as known to-day. In no branch of human study is it more desirable to be able to cultivate an inquiring habit of mind than in the opening chapters of human history. We know so little. Yet the little we know is so richly indicative of the ease with which we could add to our knowledge if only we would.

A *used* stone, however rough, is very often able to give certain indications of the manner of its use. Sometimes it shows the degree of cultivation of its user, although few deductions can be safely drawn until ample confirmatory evidence is to hand from other sources. Every stone, therefore, used or fashioned by early primitive peoples from all parts of the globe, demands preservation and consideration.

At present it is greatly to be feared that all collectors err in leaving to

perish myriads of stones which, did we but know more about them, would be as jealously guarded as are many of the treasures of the antiquary.

One sure method of adding to our stock of knowledge is to train our eyes to see. There are many indications of use and distinctions of outline in forms intentionally made, with which the majority, even of students, are as yet unfamiliar. To understand these we must take advantage of the philosophic method of exemplification, and multiply cognate specimens.

If I may be permitted I would refer to a plan I adopted many years ago, and have persistently adhered to, of visiting as frequently as possible certain pits in the gravels of the Thames valley where much removal of top-soils goes on continually to secure the supply of chalk below them for large cement works. Every stone I see there, which catches my attention, is carefully examined. If it shows any sign of use, it is kept. If entirely distinct from others, it is placed in a position where it is brought under my notice very frequently. Others with similar characters are nearly sure to be added from time to time. Eventually more turn up, showing clearly the purpose for which the type was used, the reason why they had the special form, or have upon them indications of use; and the whole group at once becomes quickened, as it were, into a living conception.

Take as an instance the ordinary axe or *hâche* with which some of our gravels teem in such bewildering variety. Many of these have points and edges which clearly show that they could never have been used in order to cut by hitting. Many years ago I found one with the point so obviously left long and slender on purpose, that, as I practically understand the use of many tools, I could no longer resist the conviction that such points had their use. This one stone enabled me to look at every "axe" with different eyes, and to differentiate scores of types. I mentally classify the majority of these new types as graving-tools. Many of them are admirably shaped to make incisions, grooves and hollows. Others again have led me to the conviction that many so-called axes could not have been used as choppers, even if nothing in their shape leads to such a suggestion. The worn edges are frequently utterly devoid of chips on one side, whilst hundreds of little flakes or splinters have been removed from the other side by the actual wear of common use. It is requisite, therefore, to notice very carefully all indication of wear and tear as well as of form in determining the names of many stones. It is obvious to all who handle many of these specimens that it would be of the utmost utility and convenience if we could determine certain names which could be universally adopted. I would venture to suggest that a new classification of very many so-called axes, and other nominally familiar types, might lead to useful results. A possible method of nomenclature and classification of *all* worked and used stones might be secured by a system which could be universally understood and applied. Let a small committee of real workers on the subject be appointed by the Anthropological Institute, with power to invite similar organisations in this country, Scandinavia, Germany, France, America, Russia and Egypt to agree to give to all stones some definite terminology. We should then know with precision

what was meant to be expressed in all communications, in any language, just as all chemical substances can follow the formulæ agreed upon and commonly recognised, no matter how the local or national names may vary.

A large number of tools, as I have said, show clearly that although very extensively used for rubbing or scraping, they never hit a blow of any force upon a hard substance. It is misleading to continue to call them axes. We may assume that they may have been used on bone, ivory and hard woods, for it is certain that men who had attained the skill they had in fashioning flint and other hard stones would freely use many materials, of which thus far no example has been identified, probably because the bulk of them have perished. They will assuredly be found, and it is our duty to look for them. We should regard a profusion of tools much worn by special use as a proof of work, nearly as strong as if we found the products of such use.

Sling-stones may be regarded as proof of knowledge of the art of slinging nearly equal to finding a sling. Missiles abound. We shall be glad we have preserved them, if some day a sling should be discovered. The real marvel is that none have as yet been found. A still more puzzling circumstance in connection with all stratified gravels containing implements is the total absence of any sign of the use of fire. I have picked up myriads of crinkled pebbles, hoping to find traces similar to those on the "potboilers," so abundant in neolithic camps, but thus far have not been satisfied with any one scrutinised. Such a stone or charcoal would be proof of fire. Many of them might show how the fire was used. An anchor-stone points to fashioning and use of canoes, or a sinker to the use of nets. It may be long before we find nets, or even the fragments of a canoe. Yet some of us will rejoice that we religiously cherish all anchors and net-weights, even when they occur in apparently impossible positions. We have to learn to free ourselves completely from the inferences based on the supposition that the want of evidence is equivalent to negative evidence. There are still many gaps to be filled in, and positive proof of very many things has still to be most patiently looked for. It is desirable most carefully to weigh the most improbable indications, or evidences, so slight that merely to suggest them is to provoke ridicule. Of this class good illustrations are furnished of clues left remaining on some stones of how they were handled or hafted.

The chief method of arrangement and classification I adopt is to group all tools by form and use, regardless of locality and age, although of course every stone is very carefully marked and fully catalogued. Thus hammer-stones, anvils, and potboilers from many places have been axes of splendid types. In some cases these may carry untouched edges as sharp as when first made. In the drawers of sundry of my cabinets may be found stones almost identically alike, brought from countries in each quarter of the globe, and of several materials such as quartz, flint, chert, porphyry, or any other of the numerous hard stones that have been used in the past or are still employed.

The great difficulty in arranging by form is the impossibility of drawing any

hard and fast line of separation between one class and another—in some cases even between several classes. There is no strict division between drills, scrapers, spoke-shaves, arrow-tips, spear-heads, graving-tools, etc.

It is now quite clear that many tools have doubtless been used for a diversity of purposes. Hence the need for a broader classification founded upon form and use, and perhaps differentiated by age and locality. Form is rarely confined to locality, and still less is it dominated by the material used.

We can find out much by grouping, and by closer scrutiny of the specimens in large collections. So-called savages can follow a trail with greater certainty and ease than our ablest scientists, merely because they attend to and understand detail which we in our superior knowledge ignore. To learn once more how our primitive forefathers lived we shall need to train our eyes to look at the faint, and in places nearly obliterated, trail they have left with keener insight and intelligence than that attributed to the best hunters of the backwoods of America or the bush of Australia. Fortunately stone best retains the traces left. When we add to our scientific preparation the insight and keenness of the savage who knows the value and use of almost invisible indications we shall see relatively in many stones more than we already discern. A few generations ago our most scientific men were utterly blind to facts now generally admitted, and so we too may believe that ere long we may read easily a language of which we are at present only forming the alphabet.

The paper was illustrated with twenty lantern slides and 370 specimens. Some of these are figured in the following plates.

Every stone figured is representative of a class, numbering in many instances hundreds of specimens, and in only one case including less than a dozen similar tools of the same dimensions and with like indications of use. No regard however is paid in the arrangement to locality or materials used.

The object of the work done is to help to determine the origin of common types of tools many of which have survived until the present day. A few of the stones shown have been intentionally selected for resemblances to other types, the purpose of which is supposed to be quite unlike. Enough is already known to show that indications of wear and use are more instructive than attention to form or the material of which the tool is fashioned.

The difficulty in obtaining photographs has prevented fuller illustration of unusual types of tools, and has led to delay in the publication of the paper.

Explanation of Plates.

Plate XXX.

This plate represents three stones each in six positions. C 1 is the full front view of a superbly worked flint (palæolith) from the Thames Valley Terrace gravels in Kent 80' O. D. where it was associated with a rich Pleistocene fauna. The signs of use on the whole of this implement, but especially at the smaller point, clearly indicate that notwithstanding its size and weight (2 lb. 7 ozs.) it had not been used as an axe. The side C 1 is very heavily abraded and worn from extended use, whilst the other side C 6

retains its cutting edge as sharp as in a fresh fracture. The whole of the edges are heavily patinated and in spots dentritical markings are distinct enough to show in the photograph and the admirable engraving.

B is one of the hard sandstone semi-ground (so-called) palaeoliths from Madras, India. The cutting edge is on the larger rounded point or butt, but a heavy blow was never struck with it upon any hard material.

A, from Somaliland, is of porphyry and has never been used for any hard work, not even for cutting soft wood.

These stones are selected to show remarkable similarity in differing material from widely scattered areas and (presumably) of very different age. All distinctly confirm the suggestion that they have not been used as axes.

In each of the stones represented in Plates XXX and XXXI the views show both fronts, sides and ends. Thus in Plate XXX, A 1 and A 6 are front and back, A 2 and A 5 right and left edges, A 3 the butt or thick end, and A 4 the point or supposed cutting end. In Plate XXXI, rows 1 and 3 are the end views.

Plate XXXI.

These nine stones are sharpened flint nodules and have all been used for heavy bruising or cutting, most probably the splitting of marrow bones. Each one is typical of many like itself, although the differences in the selected set do not seem very apparent. Many similar tools occur with very sharp or slightly worn edges. The majority fit the left hand. The markings of use on the stones shown, point to very heavy blows having been dealt with them, but not sufficiently heavy to leave signs of hammering upon substances harder than bone.

The advantages of having all six sides of a worked stone under the eye at one glance are not so apparent in this plate as in Plate XXX.

Plate XXXII.

The stones are here figured by two front views only. They show the knocking away of one corner for security of hafting, or the utilisation for this purpose of the natural conformation of flint nodules. They represent eleven groups of which G is the smallest, numerically (9), but all this group, G in particular, are very beautifully fashioned. The hafted ends, in some cases, show signs of wear, through lashing, which do not correspond to the indications of use on the (presumably) cutting edge, if they were used as tomahawks or battle axes.

The shape in every instance admits of secure attachment to a handle by lashing, rather than by growth in saplings.

Plate XXXIII.

Two flat views are given of each of eleven stones, which, for want of a better name, are called graving (or grooving) tools. Each one represents a considerable class. Apart from the improbability of such fine points as some of them possess ever having been used to strike blows, the whole of the indications of wear are upon one edge only, and show attrition by pressure which is invariably in one direction. A 1 or F 1 for instance would lose their points with a very moderate blow upon any hard substance. G has every sign of enormous use, yet the edge, G 2, shows not the slightest chipping on the cutting point. Many of the points on stones in this group, a few of which are in Plates XXXIII and XXXIV, show clearly that the makers did not fashion them with the intention of using them as axes.

Plate XXXIV.

This is a continuation of Plate XXXIII, in which grooving tools could readily be mistaken for drills on the one side and spokeshaves on the other. Were such points, as in B D and L, given only half a turn in any substance as hard as ivory or dry oak, they would snap. As shown in N 2 the edge is free from flaws and could have been used in several different ways. This specimen is representative of an enormous class of tools which seem to have performed several functions. Together with all those shown in

Plate XXXV they could not under any circumstances have been used to drill any hard or tough substance. Many hundreds of these tools also show abrasion on two edges, in the precise positions one would expect if they had been used in plain up and down or reciprocal movements, but with the third edge untouched, which could not have been the case had they been turned round, as drills.

Plate XXXV.

Of these twenty-one stones the most noteworthy are U and V, which commence a series of over 700, leading up to and overlapping the peculiar escutcheon shaped stones from Egypt said to have differentiated from the hammering out of the edges of bronze tools. These, however, occur frequently in Pleistocene gravels in Kent. The combined spokeshaves and drills, J-O rows 2 and 5 are very abundant in the drift and later gravels of many localities. P is typical of the numerous class that, resembling drills and fabricators, show clearly signs of wear arising from graving or scraping. Q and R are exquisitely fashioned and the signs of abrasion remaining upon them entirely preclude any idea of their having been used as drills.



SIX VIEWS EACH OF THREE IMPLEMENTS.

A. PORPHYRY, SOMALILAND.

B. SANDSTONE, MADRAS.

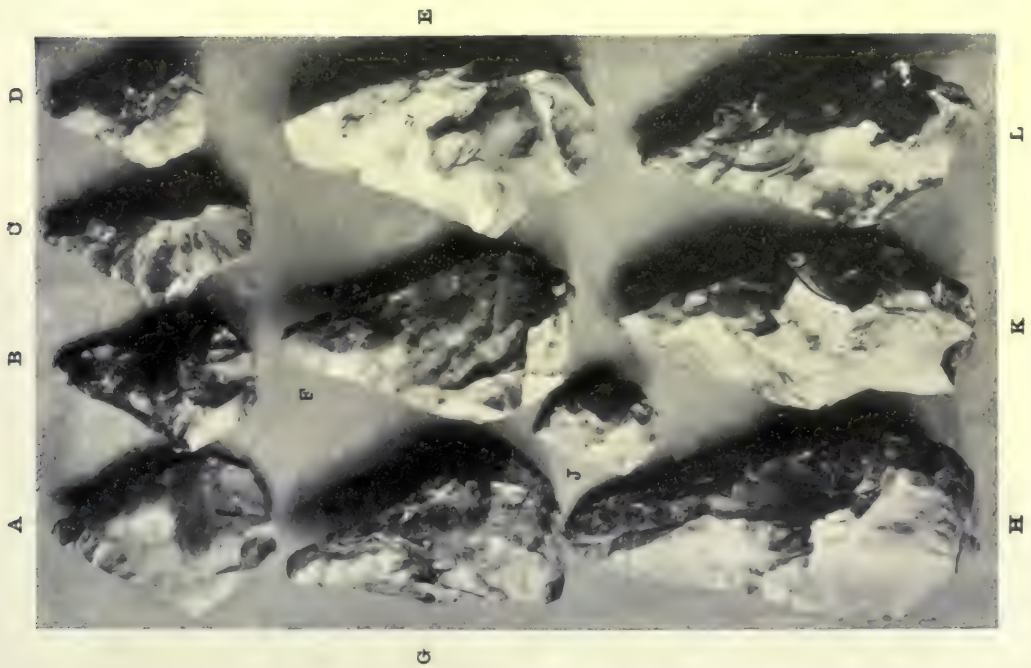
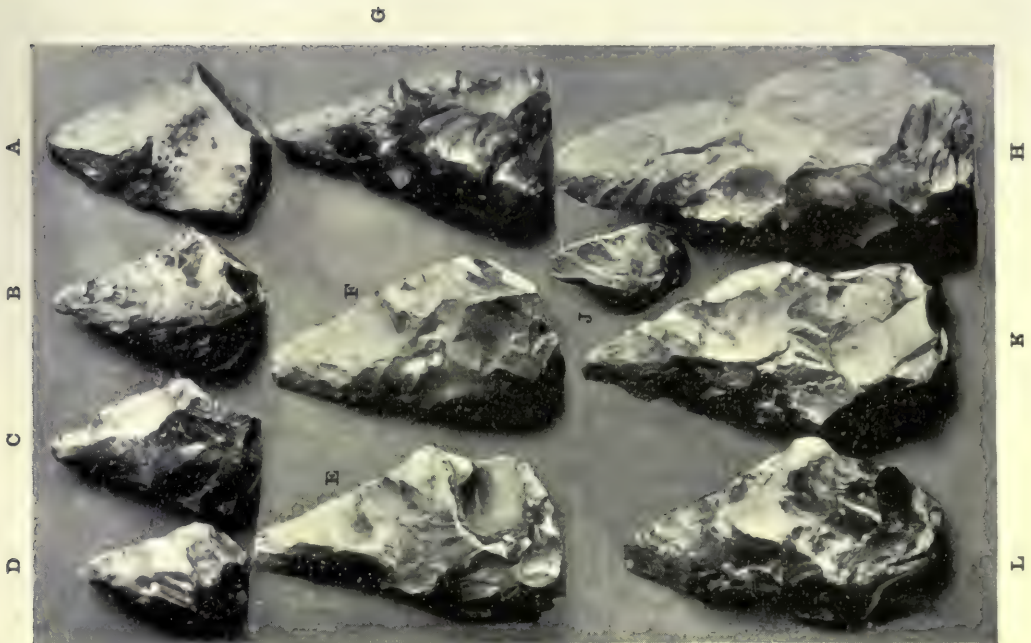
C. FLINT, KENT.

(FULL SIZED SCALE IN INCHES BELOW A.)



SIX VIEWS EACH OF 9 THICK ROUGH IMPLEMENTS FROM THE THAMES VALLEY
TERRACE GRAVELS.

(SCALE IDENTICAL WITH PLATE XXX.)



TWO VIEWS EACH OF 10 IMPLEMENTS FROM THE THAMES VALLEY TERRACE GRAVELS.
(SCALE IDENTICAL WITH PLATE XXX.)



TWO VIEWS EACH OF 11 GRAVING TOOLS.
LOCALITIES VARIED.
(FULL SIZED SCALE (6 INCHES LONG) BELOW J, 1.)



TWO VIEWS EACH OF 18 GRAVING TOOLS.

LOCALITIES VARIED.

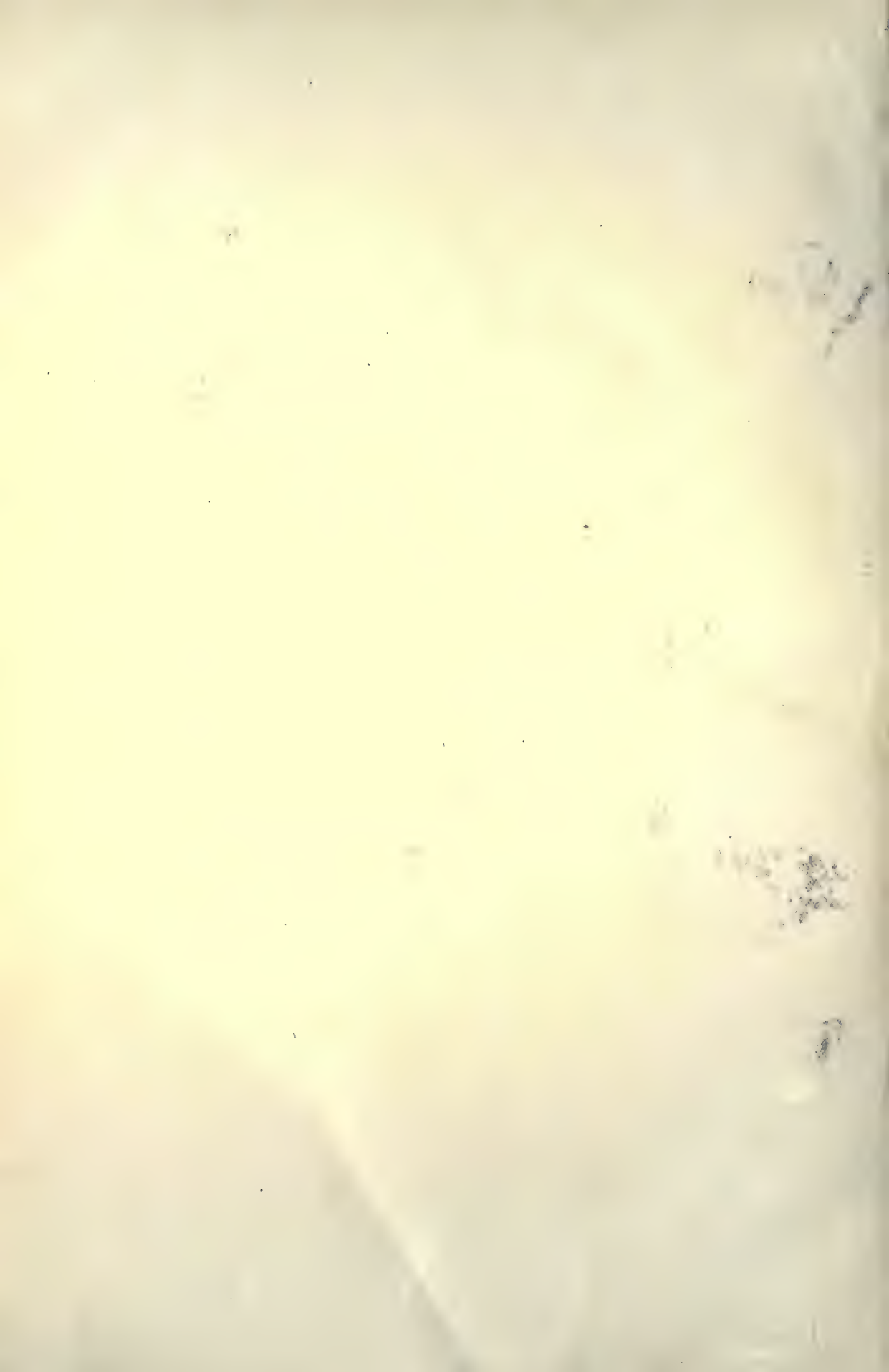
(FULL SIZED SCALE, 6 INCHES LONG, BELOW Q R)



TWO VIEWS EACH OF 21 TOOLS, VARIOUS.

LOCALITIES MIXED.

(SCALE FULL SIZED, 6 INCHES LONG.)



SURVIVALS AMONG THE KAPPADOKIAN KIZILBASH (BEKTASH).

BY J. W. CROWFOOT.

[WITH PLATES XXXVI TO XXXVIII.]

LAST summer (1900), with the kind assistance of the Craven Committee in Oxford and the Fellows of Brasenose, I was sent with Mr. J. G. C. Anderson to make archaeological researches in the ancient provinces of Lykaonia and Kappadokia. I knew that there were several settlements of Kizilbash sprinkled over the latter province, and in the hope of securing fresh anthropological matter, I applied to the Council of this Institute for the loan of some instruments. For their kind accession to this request, I offer my warmest thanks to all concerned: my only regret is that I was able to make such scant use of the loan. This was due mainly to the proverbial impossibility of serving two masters: the archaeological evidence directed us invariably to roads where there were no Kizilbash. At last it was only by separating from my companion and making a private excursion in the last week of our sojourn that I was able to collect the following material. At any other time of the year I could have got more, but in August harvesting was in full swing, the villagers slept near their crops or their threshing-floors, and only the old and the rich remained in the villages. On the other hand, I had one great advantage in the company of a servant whom we have tested in three consecutive seasons—Michali Ulkeroglu,—to whose tact and *bonhomie* I am largely indebted for such success as I had.

Throughout the summer I made repeated inquiries as to the character of the Kizilbash and obtained the most various answers. The Christians were agreed that they were good people, and that I should meet with no difficulties, whereas the orthodox Turk hates and despises them. The name Kizilbash is in fact an offensive nickname born of this animosity: literally it means Red Head and is at least four centuries old; many fanciful stories have been told as to its origin in Red Caps and so forth, but in Turkey it has now simply an obscene meaning. It is very loosely used, a certain Khainakam, for instance, was pointed out to me as a Kizilbash: why? Because he drank wine and made no public prayers. Another name almost as vague is Allevi, worshipper of Ali, but the name the people I visited used among themselves was Bektash. One giving orders to another calls out "Hie! Bektash!" The name is at least 600 years old: it was borne by a famous dervish and handed down by him to an order of a half-military type closely connected with the Janissaries. The most valuable account of the Kappadokian Kizilbash known to me is that in *Murray's Guide*, from the pen of Sir Charles Wilson: as it does not run to more than twenty lines it will be admitted that there is room for more detailed information. Sir Charles Wilson (ed. 1895, p. [66]) describes them as "a large section of the population which is either Shia in faith, or professes a religion which is a strange mixture of Shiism, Paganism, Manichæism, and Christianity,—sometimes one, sometimes another element predominating. . . . They appear to be partly derived from Shias of

Turkish origin, who were forcibly transplanted from Persia during the reigns of Selim I and Suleiman I; and partly from the original inhabitants who, after having been worshippers of the Great Goddess Ma, adopted Christianity, became deeply tainted with Manichæism, and, later, embracing Islam during the Seljûk period, were exposed to Persian religious influences." It is clear that the Kizilbash vary very much in different regions (they are found as far east as Afghanistan) and in all that follows I should like it clearly understood that my words apply only to those I have personally studied and may therefore be quite inapplicable elsewhere. (See also Humann and Puchstein, *Reisen in Kleinasien*, p. 83.)

I.

The villages with which I propose to deal lie both in the province of Angora, close to the eastern bank of the Halys. Two important roads run eastwards from Angora; the northerly one crosses the river by the bridge of Kaledjik, the southerly one leading through Kirshehr and Hadji Bektash to Cæsarea, crosses it at Cheshnir Keuprusu. At the latter I heard of two Kizilbash villages in the neighbourhood—Haidar-es-Sultan and Hassan-dede, and of these the last was described as the larger, wealthier and more intelligent: towards them accordingly I set my face. (See Map, Plate XXXVI.)

Cheshnir Keuprusu is built just at the point where the Halys enters a narrow ravine; to the south the country is open, northwards on both banks the steep rocks which wall in the river, reach back towards high and barren hills. After crossing the river, the carriage road goes in a south-easterly direction, making a more or less gradual climb, but the straightest road to Haidar-es-Sultan is a rough horse-path, which leaves the main road on the right and zigzags up the hills. In an hour-and-a-half we got over the crest of the ridge, lost sight of the river and found ourselves overlooking the village, which lies thus perched on a high upland, shut in on all sides, close to a great military and trade route, but so entirely secluded from it and with such scanty intrinsic attractions, that not one in a thousand passing along the road would ever hear of its existence. This combination of circumstances is common in Asia Minor, and seems naturally adapted to provide "cities of refuge" or backwaters of ancient custom, but is not favourable enough to stimulate the refugees to develop a new and vigorous culture. In this district the nearest town of any size is Denek Maden, and the most important people living in the neighbourhood are Turkomans, who have been settled here for about nine centuries: besides these, there are a few Kurds, Yuruks, Armenians, and "Turks," but from all alike the Kizilbash stand severely aloof.

Haidar-es-Sultan, the first village we reached, is divided into two parts, but together they do not contain more than thirty houses. In the smaller division is a walled court, and in it stands the village mosque, the *turbeh* or tomb of a great man, a wonderful well, and the rooms and stabling set apart for guests. The whole enclosure is built upon the site of a Christian monastery, as the Sheikh pointed out to me, and as the remains, marble columns of rough workmanship and a

block with a cross upon it, clearly show. The early name of the site is unknown; the present name is derived from the occupant of the tomb, of whom more anon.

The tomb inside the *turbeli* is covered with the usual green hangings, and in one corner of the building stands the banner of Ali; the other appurtenances consist of a wooden club, a small wooden dagger which has been blessed by a holy man and therefore still possesses mystical powers in the hands of the faithful, and two curious bronze implements, one like a long spoon, the other like a spear head, and both said to have been used in war. Mosque and tomb were restored about 50 years ago and externally differ in nowise from the types common in Anatolia. The one unique feature in the enclosure is the well, which is strongly impregnated with sulphur and covered with a white slab of marble with a hole cut in it, large enough to put the head through. The Sheikh said it was a mystical matter, and refused at first to answer any questions thereanent. Later, however, he told me of a wise woman in the village who could foretell the future, but when I asked to be allowed to consult her myself, they demurred that I did not know enough Turkish to understand all she would say. On my offering to take my Greek servant as interpreter, they objected that he might learn more about my future than I should care to have him know. But finally a fee removed their last scruples, and the sibyl was fetched. An old woman, unveiled and dressed in the ungainly fashion of the country, of short stature, with reddened hair, a thick nose and a pasty, doughlike complexion; there was nothing romantic in her outward appearance. She looked suspiciously at me—probably I was the first European she had seen,—but had the expression of a stupid, sluggish-witted rustic, the last person to play an elaborate joke upon one. Silently she led me to the well and told me to look down and sniff the sulphur. Then she threw herself flat upon the ground, thrust her head well through the hole, and inhaled long breaths of the foul air until she began to groan. Lifting her head slightly, she uttered a few words, but the inspiration was incomplete and she had to put her head through the hole again and draw in breath after breath once more. She groaned again and began to kick convulsively, so the Sheikh's son knelt by her side and held her under the armpits, and thus supported she delivered the rest of the divine message. Like some other oracles, in spite of all her efforts this was disappointingly vague. "I was not so pious as I should be: if I would only walk in the path of God, He would give me the desire of my heart, and at last I should brilliantly achieve the quest now absorbing my thoughts. One day I should return with my servant to Haidar-es-Sultan, and, as an earnest of my repentance, it behoved me to offer an oke of candles and sacrifice a sheep." The getting of the oracle quite exhausted the old woman, and she remained about with us in the enclosure for about an hour in a dazed state, without uttering a word: then she walked off alone as silently as she had come.

Just as the priest is called a Sheikh, the prophetess is called a Sheikhin, and her power was described as a deodand: when one prophetess died, God sent this gift to another but always to a woman, and the office was not hereditary, like the

Sheikh's, which went by strict primogeniture. The people said she was much frequented, but I did not learn the character of any other of her oracles. The method of obtaining them and her sex suggest of course ancient examples of hydromancy, but I know of no shrine where the procedure was exactly the same. I take the original idea implicit in it to be that there is a spirit in the well: to it the inquirer must introduce himself, hence I was obliged first to inhale the fumes; then the spirit is able to communicate his knowledge to a chosen prophetess, when she has reached a properly ecstatic condition: lastly, the spirit in question cannot be wholly dissociated from the occupant of the tomb.

Besides inquirers into the future, diseased people, especially the blind and the weakminded, came to the shrine, and the window-bars of the mosque had one of the largest collections of rags I have ever seen. Murray speaks of a great sacrifice of sheep in summer at this *tekke*; the only great sacrifice I could hear of was held in September, and corresponds to a Persian feast, but it is a common thing for a good Kizilbash or a grateful visitor to offer a sheep at any season of the year. Similarly, Sir Henry Rawlinson describes a sanctuary of the Alî-Illahîs in Holwân called the tomb of David, which he never passed "without seeing the remains of a bleeding sacrifice," and which was visited by pilgrims from all parts of Kurdistan. (*Journal of the Royal Geographical Society*, ix (1839), p. 39.)

The second village to which I went, Hassan-dede, lies close to the Halys on the eastern bank, two and a half hours south of the easy ford at Yakshi Khan and three and a half hours west of Denek Maden. It contains from ninety to a hundred houses, and I found the people much more intelligent and quick-witted than those at Haidar. They received me with a dignified courtesy which I have never seen surpassed even among the Turks; the Sheikh introduced those present in the "Odah," adding with a conscious pride the family name in some cases, and giving three or four of the more considerable the title of Effendi. They struck me as more serious than the average villager; evidently they kept up and valued their own traditions, and, though quite communicative up to a certain point at least, did not ask the usual questions about my country, which merely idle curiosity might prompt. They were, too, energetic and prosperous, and volunteered to show me what they thought likely to be of interest.

In the southern outskirts of the village stands a large well-built mosque with a minaret in which is built a stone from Mecca, and beside it two *turbahs* where lights were burning when I rode into the village late after sundown. One *turbah* covers the coffin of Hassan, draped as usual with a military banner in one corner, the second his two sons and daughter, the former each surmounted by a white woollen fez similar to that worn by the present Sheikh. Certain revenues had been set apart, by the Sultan Mustapha they said, for the maintenance of the mosque, formerly amounting to 6,000 piastres a year, but the financial stress of recent years has compelled the present Sultan to reduce this by two-thirds, let us hope only temporarily.

In this village I was able to correct and amplify the traditional history I had picked up in the former place. The Sheikh at Haidar-es-Sultan said that Haidar was the son of the King of Persia and came from Khorassan from a town named Yassevi; he was also called Khodja Ahmed¹ and was the disciple of the famous Hadji Bektash. With the latter he travelled to Cæsarea, and there took a Christian named Mēnē to wife, and together they came to the place of his tomb, where they begat children and died—the whole village now claiming descent from him. This took place, said the Sheikh, long before the Osmanlis came into the country, “about the time of Mohammed”! In Hassan-dede they said that Haidar and Hadji Bektash came there 670 or 650 years ago, and the fourteenth century, the date given by historians for the famous dervish who gave the Janissaries their name and emblem, tallies more closely with this. The connexion between Haidar-es-Sultan and Hadji Bektash is intimate enough to-day; the present Sheikh told me that he had visited the shrine of Hadji Bektash, which is about three days to the south, nine times, and further that they received frequent visits from Bektash dervishes. I met one of the latter at Kirshehr, and he too said that they came from Khorassan, before the time of the Osmanlis. Hassan, the hero of Hassan-dede, came from the same place, but only 400 years ago; however, being a holy man, he had known his precursors in a previous state and his teaching was the same—a chance betrayal of the belief in metempsychosis which underlies so many of the strange identifications one hears. The present Sheikh claims direct descent from him, and introduced me specially to several of his kinsmen; their family name was Salah-ed-din, and in all there were over twenty houses in the village filled by the same stock, the rest of the village being Bektash, but descended from natives whom Hassan found there on his arrival. All the Salah-ed-din were buried together close round the tombs of their ancestors; some are rich, some poor, and as they intermarry freely with other Bektash, but never with Osmanlis, the purity of their stock is no greater than that of their fellows. The Sheikh himself told me most of these particulars and took me round the tombs, but on purely historical questions he frequently bowed to the correction of others. The Seljuk Turks they all professed to hold in pious memory, and referred to the Mevlevi dervishes at Konia and those of Hadji Bairam at Angora almost as kinsmen. On the other hand I was astonished to hear them repeat twice that they loathed the Janissaries as their bitterest enemies.

II.

The fragmentary memories which I have recorded above have at least one indisputable value: they illustrate to what an extent the modern Anatolian villager

¹ An early sheikh of the Nakshbendi order, who hailed from Yassevi. Hammer-Purgstall (*Gesch. des Osman. Reiches*, I, p. 36) refers to a Turkish book, *Neschhat* (misprint for *Reschhat*) *ainul hajat*, for full particulars of his life. He is mentioned also by Ramsay as a miracle worker: “I have observed the veneration of Karaja (*sic*) Ahmed at (two villages in Phrygia). At the latter sick persons sit in the *turbe* all night with their feet in a sort of stocks, and thus are cured” (*Religious Veneration in Asia Minor*, 9th Congress of Orientalists, London, 1893, pp. 381–391).

lives in the past, and I venture to think that they show that his traditions have been rather unduly depreciated. These legends, confused as they may be, do refer to definite historical occurrences, and though I must leave the graver problems which they raise to others to solve, I may be allowed to add a few notes which will vindicate a respectable antiquity for these stories, if not historical accuracy.

The two names which they bear, Bektash among themselves, and Kizilbash among the Turks, give us a key to their true position. The open animosity which now prevails between Bektash and Osmanli is not a century old, it dates from the disappearance of the Janissaries, which was followed by a general persecution of the Bektash. The latter remain, however, in great numbers in many parts of the Turkish empire; in Cairo, for example, they have an important *tekke*. But the recent persecution was not the first cause of difference between the two; an Egyptian friend has, for instance, given me a reference to Hadji Bektash from a collection of memoirs called *The Anemone* (الشقائق النعمانية), published at Cairo in 1277 Hegira, but written by a Turk of Constantinople in the sixteenth century (A.H. 965). "His tomb is in Turkey, and over it a cupola, and it has a small mosque. And in this our time certain heathen (كفار—a strong word) with false pretensions pretend to belong to him, but he denies them without doubt." Wherever they are found, the same mysterious and discreditable tales cluster round them, and it seems certain anyhow that they reach back at least to the fourteenth century, the time of the "Anatolian Decarchy," and that kings of the earth delighted to honour them once and do so no longer.

The name Kizilbash, on the other hand, has different connexions, and is not, I believe, by any means generally applied to Bektash; the two are quite distinct, and I was surprised to hear the former using it among themselves. The double name can, however, be very easily explained, and sufficient material to answer my immediate purpose is to be found in the writings of an old Elizabethan historian. Samuel Purchas published the third edition of *His Pilgrimage* in the year 1617¹; he was a City clergyman who made a great compilation of all that was known of the religious history of the world, in which he incorporated much unpublished material supplied by the travellers and merchants he met in London, men gifted with the keen observation and feeling for detail characteristic of the time. Of the Kizilbash movement he gives a tolerably full account, based in many parts upon the testimony of European eye-witnesses; some slight contradictions may be here ignored as immaterial to our quest. In the latter half of the fifteenth century the dominion of the Osmanli Sultans over the eastern parts of Anatolia was still extremely precarious; several princes, both Muslim and Christian, still maintained their independence, and Persia, then under Uzun Hassan, the greatest of the White Pelt dynasty (Turkoman), was a really formidable rival. Uzun Hassan was connected by marriage with the Emperor of Trebizonde, and a daughter of his married a great

¹ See pp. 430 foll. Compare von Hammer, *Geschichte*, ii, p. 334 foll. and Zinkeisen, *Geschichte*, ii, p. 343 foll., p. 547 foll.

sheikh named Haidar. Haidar came of a famous family of mystics long settled at Erdebil, and relying in part no doubt upon his connexion with the king, aimed at political power; finally he was killed in a semi-religious war in 1488. The death of Uzun Hassan and the murderous rivalry and final extinction of his house made more easy the success of Ismail, the son of Haidar, who eventually became master of Persia, and founded the Saafi-ed-din dynasty. Both father and son combined religion with politics and naturally set themselves at the head of the learned mystics, the Sufis; they preached Ali and posed as protectors and patrons of those Sufis, who remained in Anatolia as a relic of the Seljuk empire, which of course was highly offensive to the Osmanlis. According to Purchas, Ismail took as his cognizance the Red Cap, and, whether this be so or not, the name Kizilbash now appears applied generally to his followers. Like his father, he invoked curses on Abu-bekir, Osman, and Omar; to this day no Bekdash will use their names. Purchas repeats as one alternative version the story of Haidar's marriage with a Christian named "Martha, daughter of Lady Despina, who was daughter of Kalo Joannes, Emperor of Trebizonde." The names only and the places have been slightly changed in the modern tradition; the Christian connexion abides and answers to a real reciprocity of friendship and fellow-feeling. The actual occupant of the tomb which I saw, if there be one at all, certainly cannot be Haidar, for the sphere of Haidar's life and death was far away to the east, but he is no less certainly identified with him by the villagers.

Again Purchas (pp. 441, 2) tells the story of two disciples of Haidar, "Chasan Shelife and Schach Culi," who fled to Armenia Minor; there they lived for a while as austere dervishes, and gradually spreading their fame abroad, at last gathered round them an army of fanatical Kizilbash and were only defeated and slain after overrunning the greater part of Asia Minor. The date given me by the people at Hassan-dede and the name make it probable that their hero was this same disciple.

Other details will prove how faithfully the Bekdash have clung to their old practices. I was told that they shave the beard sometimes but never the moustaches, and Professor von Luschan makes the same report of the Lykian Tachtadji. Purchas says, "Ismail was of faire countenance, of reasonable stature, . . . shaven abut the mustaches." In return for the opprobrious nickname of Kizilbash, I heard that the Bekdash nickname the Osmanli "Hounds"—Hazyr. Purchas says "the Sophians (=Sufis) are enemies unto Dogs, killing all they find," and Ismail himself "killed all the Dogs in Tauris" (=Tabreez). And speaking of a later period he adds, "It is the common opinion that the greatest part of the Mahumetans in Soria and of Asia Minor are secretly of that sect"; and so too wrote Marcantonio Barbaro in 1573 (quoted by Zinkeisen, iii, p. 567).

These Bekdash, then, are, as they say, true representatives of a "moment" before the rule of the Osmanlis; when the latter triumphed, the Bekdash were men already learned in the wisdom of the day and ever since have chafed under the foreign yoke. The name of Kizilbash they owe to the attempts which they made about the year 1500 to win independence, and the banners and weapons of battle

which they keep in their *tekkes* are trophies of these vain religious wars, in curious contrast with their present retiring tranquillity. The incidents of their rise and fall will remind many of another episode enacted on the same stage and with the same result, the revolt of the Paulician heretics in the ninth century.

III.

Enough has now been said to make clear the historical place of these Bektash during the last six or seven centuries, but this by no means exhausts our tale. As Ramsay has repeatedly shown, survivals of ancient rite and custom still linger all over Anatolia, alike among Christians and Muslims, but among certain heretical sects these survivals are far more numerous and form indeed the heart of the people's life. Professor von Luschan, in his famous discussion of the Tachtadji (*Archiv für Anthropologie*, 1891, pp. 31-53, or in Petersen and von Luschan, *Reisen in Lykien*, Wien, 1889, p. 198), has thus stated the question which this fact provokes: Are we to regard these scattered sects, Tachtadji, Yezidi, Ansariyeh, and so forth, as more or less degenerate offshoots of Shiitic Islâm or as stray relics of a very ancient heathen culture? The influence of Islâm is very strong in some cases, but it is none the less possible that in other cases these sectaries have preserved, as faithfully as the Parsees or the Brahmans, the old natural religion of the land; they may be islands of a submerged continent. Professor von Luschan treats the Tachtadji from the physical or anatomical side. My own material is too small to permit me to follow him far in this field; such as it is, it will be found in the appendix. The evidence which von Luschan collected, however, enabled him to connect anatomically the Tachtadji with the Lykian Bektash; it would be reasonable, therefore, to suppose that the Kappadokian Bektash may also fall into the same circle, and my own notes give some colour to this. It seems worth while, then, to pursue the subject in another sphere, the psychological, and ask whether we find here fragments or more of the culture which, as we know, prevailed over this area before the invasion of any of the great world-religions.

In both the villages I have described the tomb of a saint or great man fills by far the largest place in the sentiments of the people; the tomb and not the mosque is the dominating centre of attraction. As a rule the Anatolians here and elsewhere, beyond a general superstitious respect for the cemetery which varies very much in different parts, bestow no tender solicitude upon the dead, and the appearance of a village graveyard is miserable beyond words. This neglect is a good foil to the care taken of the *turbek*; it is an object of pride and veneration, and the villagers tell you stories of the cures wrought there and the sanctity of the deceased. The occupant of one of these tombs receives no doubt, to some extent, the same honour that is paid to a saint, Christian or Muslim, in the Mediterranean area (see Lane, *Modern Egyptians*, c. x.), but there is one important difference, made especially clear by the practice in the two villages I visited. The service and cult of the saint is in the hands of people who claim to be lineally descended from him, and often profess to have some esoteric truths,

which they transmit only to their children; this it is which links them to the pre-Christian worship of heroes. Very often one comes to a deserted *turbek*, where all inquiries as to its occupant prove fruitless; this simply means that the family which claimed descent from the saint, however fictitiously, is extinct, and no one has stepped into their place. In classical lands we can point to an exact parallel: heroes held the same position, and those who carried on their worship were obliged to discover some connexion with them either by blood or by adoption. In Greece one hears of many shrines where the name of the hero was forgotten and a nameless *ἥρως* worshipped, and the cult reaches back to a time before the Dorian invasion. The choice of a name famous in legendary history like that of Haidar or David is analogous to the many *heroa* named after Midas or Herakles. In fact, the one non-Hellenic trait lies in the spiritual pre-eminence of the modern hero and the possession of esoteric doctrines connected with this, and these are older than El Islâm (see the passage from Eusebios quoted below).

Connected with the *turbek* at Haidar-es-Sultan we found the sacred well and the reputation of the saint as healer and prophet. The combination is almost necessary for the permanence of the cult, for in a place where ancestor worship and the worship of the vulgar dead has long disappeared, the hero can only maintain his dues by giving the worshipper a practical return for his loyalty. The form of this return is so common everywhere that I need not collect parallels. Holy wells are as much venerated to-day as in antiquity among both Christians and Muslims; the triple combination of hero, healer, and prophetess is much rarer, but we have an exact analogy at Delphi now that we know that the worship of Apollo was engrafted on an earlier cult of the dead.

It is not necessary here to repeat the arguments which have been often urged to support the theory of a single homogeneous culture connecting Greece with Asia Minor; suffice it to notice that the core of a living Anatolian religion is the old worship of heroes.

Second only in importance to their religion must be a people's marriage customs. Last summer I was told by a Christian that it was generally reported of the Bektash that they made incestuous marriages, fathers with daughters, and brothers with sisters. On such a delicate subject it was difficult for a traveller to make full inquiries, and nothing I could learn supported the charge at all. The Bektash averred that they married Bektash only, were monogamous, and admitted no divorce, and even my informant did not pretend to believe the canard. But Professor von Luschan heard of two certain unions of this kind among the Lykian Tachtadji, and the permanence of the scandal is a striking case of survival. In Karia we know such marriages were common, and Greek ideas of "prohibited degrees" were profoundly different from the Roman; in Greece under certain circumstances a man was practically obliged to marry his niece, but in Rome by so doing the Emperor Claudius outraged the public sense of decency. And in Kappadokia itself we have an interesting witness in the person of Basil. Epiphanius, a Cypriot bishop who was compiling a massive work on heresies,

questioned him about some people called the Magousaioi, and Basil replies thus "The Magousaioi, as you were good enough to point out to me in your other letter, are here in considerable numbers, scattered all over the country, settlers having been long ago introduced into these parts from Babylon. Their manners are peculiar, as they do not mix with other men. It is quite impossible to converse with them, inasmuch as they have been made the prey of the devil to do his will. They have no books, no instructors in doctrine. They are brought up in senseless institutions, piety being handed down from father to son. In addition to the characteristics which are open to general observation, they object to the slaying of animals as defilement, and they cause the animals they want for their own use to be slaughtered by other people. They are wild after illicit marriages; they consider fire divine, and so on. No one hitherto has told me any fables about the descent of the Magi from Abraham; they name a certain Zarnuas as the founder of their race" (*Letter* 258, § 4). Epiphanius (*Expos. Fid.*, p. 1094) adds nothing material to this, but Eusebios is more explicit, and I will quote him also in full (*Præf. Evangel.*, vi, p. 275). "Among the Persians it was the custom to marry daughters and sisters and mothers, and not only did they make these impious marriages in their own country, but those who have left Persia also, the so-called Magousaioi, practise the same iniquity, handing down in succession (κατὰ διαδοχὴν) the same laws and customs to their children. There are many of them at the present in Media and Egypt and Phrygia and Galatia." In the time of Eusebios Galatia included the villages with which we are concerned, and in the face of practices such as we have mentioned, practices which, however common at one period, must have been bitterly opposed by every religious teacher, Christian or Muslim (see Burton, *Arabian Nights*, I, p. 110), since the time of Basil, we cannot refuse to recognise an unbroken continuity between the Magousaioi of the past and the modern Kizilbash. Only the open practice of their faith—the worship of fire and so forth—has through fear of persecution fallen into abeyance, and the lights which I saw in the *turbeh* at Hassan-dede may be a survival of this (see also *Quarterly Review*, 1897, 2, p. 425, and compare Bent's account of the "Ansairie," *Cornhill Magazine*, 1891, New Series, vol. xvi, p. 68, foll.). A few notes may be added on these two passages which will bring out the whole point in clearer relief. The phraseology of Basil is curiously like the terms still in use among the Turks. "They have been made the prey of the devil"—the Turk calls them devil worshippers in many places, Layard's account of the Yezidi or Luschan's account of the Tachtadji will show with what justification. "They have no books"—this is rightly explained by the writer in the *Quarterly* to refer to religious books and is exactly parallel to the modern Turkish description of them as people "without a book," i.e., Koran or Bible. "The senseless institutions" are probably rites of initiation and esoteric doctrines of manifold incarnations, eschatological matter, and so forth (see Bent, *loc. cit.*, and other travellers, e.g., Van Lennep, *Travels in Asia Minor*, 1, p. 293, foll.); with Basil's epithet few who have read about the Druses and Ansariyeh will care to quarrel. Zarnuas I suppose to be one of the many corruptions of

Zarathustra's name. As regards the name Magousaioi, those who like to find a geographical origin for every sect will be able to point to a town in Arabia named Magousa (Pliny, *N. H.*, vi, 32; Strabo, pp. 118, 619, 780): the word is used in modern Arabic = fire-worshippers. Of superstitions connected with animals I could find no trace, except that they, like so many others, regard the hare, which they call "Ali's cat," saying that he petted it as others keep pet cats, with special respect. Nor had they, like the Tachtadji, any special fear of particular colours.

Two other survivals from the pre-Islâmic period may next be mentioned, compelling us to the same conclusion. One of the first things you hear from a Turk about them is that they drink wine and do not fast, and the Sheikh at Haidar-es-Sultan gave us a vivid picture of the joys of winter, when it was cold outside and there was nothing to do but light a fire and tipple by it from morning till night. In their drinking, which is otherwise orthodox enough, they have one peculiar custom: however small the cup out of which they drink may be, they hold it with both hands. The dervishes at Hadji Bektash do the same, as I was told on good authority, and Luschan reports it also of the Tachtadji, calling the practice "*völlig unklar in seiner Bedeutung*." But some light is thrown on the subject by a sentence in Ainsworth's *Travels and Researches* (1842, vol. ii, p. 188). Of the Yezidi he says they "speak often of wine as the blood of Christ, and hold the cup with both hands, after the sacramental manner of the East, when drinking it." It seems to me highly improbable that the Yezidi or the Anatolian Allevi have got the custom from the Christians and extended it to common use; far more likely that the latter should have consecrated and confined to a special rite a custom once universal in the East. One is tempted to ask whether such a custom does not underlie the form of the classical drinking cup, the *kylix*, which invariably has two handles. The large eyes of Ionian origin which are the commonest decorations of these *kylikes* in the sixth and fifth centuries B.C., and which were no doubt intended as *apotropaia* to avert the evil eye, seem indeed to point to a phase when a religious or superstitious significance was attached to every act of drinking.

Again, Professor von Luschan mentions the extraordinary ornaments which he saw in the ears of Lykian Bektash dervishes; Purchas similarly describes huge earrings as being worn by most of the dervish orders in the sixteenth century. In classical literature and in the Bible there are frequent references to the earring as the mark of the Oriental, and the monuments, Assyrian and "Hittite," tell the same tale. Juvenal, for instance, writes, "*Natus ad Euphratem molles quod in aure fenestræ arguerint*," and I could apply the term "window" without much exaggeration to the huge hole which I saw bored in the ear of the dervish from Hadji Bektash whom I met in Kirshehr.

This evidence proves that we have in these villages stumbled upon the certain fragments of a pre-Islâmic civilisation. In the previous section I tried to fix the position of our villagers during the last few centuries in which the country has been under Muslim rule; we can now carry the process farther back and sketch in outline their earlier development.

Officially they rank as heretical Mussulmans; their traditions bring some of them at least from Khorassan. These facts must not be blinked; on the contrary I am ready to accept both, and regard as probable on all grounds (*see* appendix) a fusion between the earlier population and some of the first Muslim immigrants, who were driven by Mongol pressure from their seats in Bokhara and Samarcand and elsewhere. But neither must the bearing of certain other facts be blinked. The descent of these refugees from Khorassan is but a single wave in a rhythmic stream which has been flowing for thousands and thousands of years. Even in neolithic times Kappadokia appears to have turned to the east rather than the west; the form and material of the stone implements found there point to Armenia and inner Asia. In the Hellenistic age Hellenism, as then understood, made no progress against the intense nationalism of the native states, which were ruled by kings who prided themselves on descent from one of the Seven Persians. Droysen describes the country as "*mit iranischen Wesen erfüllt* (iii, p. 84). In the Christian period Basil and Eusebios repeat and amplify the witness of Strabo. Already, therefore, before the time of Alexander the inhabitants of Kappadokia had come under oriental influence and developed a religious theory of their own which made them impervious to Greek and Christian missionaries; and this religious theory the brief notices I have quoted enable us to identify with the practice of the living Kizilbash. Not only have we thereby obtained a new authority from which to reconstruct the past, but the mere fact of its permanence throws fresh light on the intervening centuries, on the spread and character of Christianity in Kappadokia, and the tolerance and assimilative powers of the Seljuk Turks, and the true inwardness of several anti-Sunnite movements which owed their strength to an alliance of new dissenters with old pagans. And yet even this "Persian" culture was only a compromise and a pouring of new wine into old bottles. Behind it we see traces of a simpler, less specialised civilisation which once stretched at least from the Persian mountains to the mainland of Greece. This lay at the foundations both of the Persian system and also of Hellenism, and by removing the upper strata we can recognise in the *temenos* at Haidar-es-Sultan a living embodiment of the humble origins of Delphi, before the Dorian Apollo's advent raised it to a pan-Hellenic significance. Archæologists who have busied themselves in distinguishing the various layers accumulated on an ancient site will, I hope, acknowledge in this method a rough comment on their own successive periods, and one that can, alas, be only rarely made.

APPENDIX.

For reasons which have been already mentioned, I was unable to take as many measurements as I should have liked. In all I measured fifteen, five at Haidar-es-Sultan and ten at Hassan-dede, but one of the latter (No. 15) had such an unsymmetrical and abnormal head as to be quite worthless; I only measured him because he was a rich man whom I dared not offend. The Sheikh at Haidar was the only one who refused to be either measured or photographed, and this "because he was a holy man"; others, including his own son, he compelled to submit to my tender mercies,

TABLE I.

Number.	Name.	Age.	Height.	Length of head.	Breadth of head.	Vertex to ear tragus.	Smallest breadth of forehead.	Bizygomatic breadth of face.	Nasion to chin.	Length of nose.	Breadth of nose.	Distance between eyes.	Cephalic index.	Length by height index.	Facial index.
1	Mehmed ...	58	166·7	176	161	137	112	152	139	64	38	33	91·4	77·8	91·4
2	Haidar Effendi ...	45	170·9	179	161	123	111	139	129	61	36	30	89·9	68·7	92·8
3	Moussa ...	21	171·4	178	157	128	110	141	131	56	34	—	88·2	71·9	92·9
4	Emrullah Effendi ...	50	155·8	187	164	132	107	147	133	62	35	32	87·7	70·5	90·4
5	Mehmish ...	35	163·5	175	153	127	103	134	131	58	34	—	87·4	72·5	97·7
6	Husein ...	56	—	183	159	137	114	146	135	63	38	35	86·8	74·8	92·4
7	Saduk ...	27	165·7	189	163	133	110	146	125	54	35	—	86·2	70·3	85·6
8	Bairam ...	38	162·3	181	153	130	112	138	126	51	35	33	84·5	71·8	88·4
9	Abbas ...	60	163·3	185	156	134	107	145	134	57	35	30	84·3	72·4	92·4
10	Veli Effendi ...	65	170·8	189	159	131	114	143	131	55	37	35	84·1	69·3	91·6
11	Mehmed ...	40	167·8	187	157	128	107	141	133	55	37	—	83·9	68·4	94·3
12	Djafir ...	54	160·5	179	150	138	110	141	124	59	34	34	83·7	77·0	87·9
13	Mouslou ...	20	174·4	188	156	139	112	139	132	57	39	—	82·9	73·9	94·9
14	Mustapha ...	35	158·1	194	160	125	117	151	151	63	35	36	82·4	64·4	99·9
15	Suleiman Effendi ...	38	175·4	191	146	140	104	145	123	58	39	32	76·4	73·3	84·8

NOTES.—Of these, Nos. 3, 5, 7, 11, 13 were taken at Haidar-es-Sultan; Moussa (No. 3) was a younger son of the Sheikh. The rest are all natives of Hassan-dede, Nos. 1, 6, 8 being described simply as Bektash, the remaining seven (Nos. 2, 4, 9, 10, 12, 14, 15) being Salah-ed-din. Veli Effendi (No. 10) was the Sheikh of the village and therefore head of this family. For the portraits of 1, 9, 10, 12, see Plates XXXVII, XXXVIII.

Three had blue eyes, and all dark brown hair or grey.

Abbas (No. 9) had no face hair whatever.

Omitting Suleiman Effendi, we have, therefore, measurements of fourteen Kappadokian Bektash to compare immediately with the measurements taken by von Luschan in Lykia, that is, with thirteen Tachtadji and forty Lykian Bektash. This can be done most simply by arranging the three groups in tabular form according to the three most important indices.

TABLE II.
Comparison of cephalic indices.

Indices.	14 Kappadokian Bektash.	13 Tachtadji.	40 Lykian Bektash.
80 — 85	7	5	6
85.1 — 90	6	7	34
90.1 — —	1	1	0

TABLE III.
Comparison of length by height indices.

Indices.	14 Kappadokian Bektash.	13 Tachtadji.	40 Lykian Bektash.
— — 70	4	0	0
70.1 — 75	8	3	10
75.1 — —	2	10	30

TABLE IV.
Comparison of facial indices.

Indices.	14 Kappadokian Bektash.	13 Tachtadji.	40 Lykian Bektash.
— — 90	3	10	37
90.1 — 95	9	1	2
95.1 — —	2	2	1

If we looked at the cephalic index only it would be easy to group all these together as an entirely homogeneous brachycephalic race, but the other indices speedily dispel this pleasing illusion. The Kappadokian villagers present startling differences even within the limits of a single family. Looking, however; as is only right, at the individuals here measured, two at least, Mehmed and Djaffir (Nos. 1 and 12), stand out as evidently akin to the Lykian group. Through Professor von Luschan's kindness I was able to throw upon the screen photographs of a Tachtadji and a Syrian Fellah (Ansariyeh) and the likeness between these and the two former convinced all, I think, of their mutual connexion. They have the same broad, high skull, so straight behind that some have supposed its form to be due to artificial deformation; for this latter hypothesis, however, resuscitated by W. Z. Ripley, there is not a shadow of evidence. The short-headed Armenian child lies in a cradle of the same type as the long-headed Anatolian Greek, and the shape of the former's head is that of *Homo Alpinus* wherever he be found. The antiquity of this type in Anatolia is proved partly by the evidence of Hittite monuments, partly by various ancient skulls that have been found in North Syria (Sendjirli), Lykia, Phrygia (Boseyuk), and Assos, and is further corroborated by its latter-day extension.¹

¹ See the references given by Mr. Duckworth in *Journ. Anthropol. Inst.* (N.S.) II, p. 145, foll., and to these add Virchow, *Ueber alte Schädel von Aiosos und Cypem*, Berlin, 1884, and *Verhandlungen der Berliner anthropologischen Gesellschaft*, 1896, p. 123.

The differences between the Kappadokians and the Lykians may be due to immigrations during the Seljukid period or perhaps earlier, for even in the most archaic times of which we are likely to find traces we shall probably find various types existing side by side.

DISCUSSION.

Sir C. WILSON: I have listened with much pleasure to Mr. Crowfoot's interesting paper. My experiences amongst the Kizilbash agree generally with what he has told us. They are disliked by the Sunnī Moslems, possibly because they will not intermarry with them; and are accused of all kinds of obscene conduct without, as far as I could ascertain, the slightest foundation. They seemed to me a cleanly, inoffensive people, friendly to strangers, and ready, if no Sunnī were present, to talk freely upon all subjects but their religion. The women are allowed much more freedom than amongst Sunnī Moslems, and, except in presence of a Sunnī, do not veil. Their customs differ in various localities, and some of them have certainly come down from the Christian period during which Kappadokia was Hellenised though, perhaps, not so completely as has generally been supposed.

I have never heard the Kizilbash called Bektash, and was not aware that they used that name amongst themselves. The names, in their original application, are so wide apart, that I do not understand how they have come to be applied to one people. I can only suppose that the villages visited by Mr. Crowfoot were on land which formerly belonged to the Bektash Dervishes, and that the villagers had been protected by the Bektashes when the fraternity was powerful.

The term Kizilbash ("red-head") came into use during the rise of the Safavī dynasty, which reigned over Persia for more than two hundred years (1499–1722). It was used to distinguish the Persianised Turks, or Turkish Shi'as, who formed the ruling class and wore red caps, from their enemies the Sunnī Turks and Tatars to the East, who wore green felt caps and were called "Yefhil-bash" ("green-head"). When the term was first used in Asia Minor I do not know, but suppose it must have been after the campaign of Selim I in Persia (1514), when Shi'a Turks from Persia were settled in Asia Minor, apparently under the belief that they would eventually become Sunnīs.

Hajji Bektash was a native of Nishapūr, who seems to have found his way to Asia Minor about the time when Orkhan was conducting his early campaigns against the Byzantines (1326–46). He is known to have taken a leading part in the capture of Mudania (1351) and appears to have been more of a fighting dervish than of a philosophic devotee such as the celebrated Mevlana of Konia. Hajji Bektash gave the Janissaries their name, *Yeni-cheri*, and their standard; and his followers were closely connected with the Janissaries until their suppression (1826). At that time the Bektashes held extensive lands throughout the Empire, and had become a great power. Their lands were nearly all confiscated, and their power completely broken by persecution. The exemption of the monastery of Hajji Bektash from the general confiscation seems to have been due to its having been on land granted to the founder for military service.

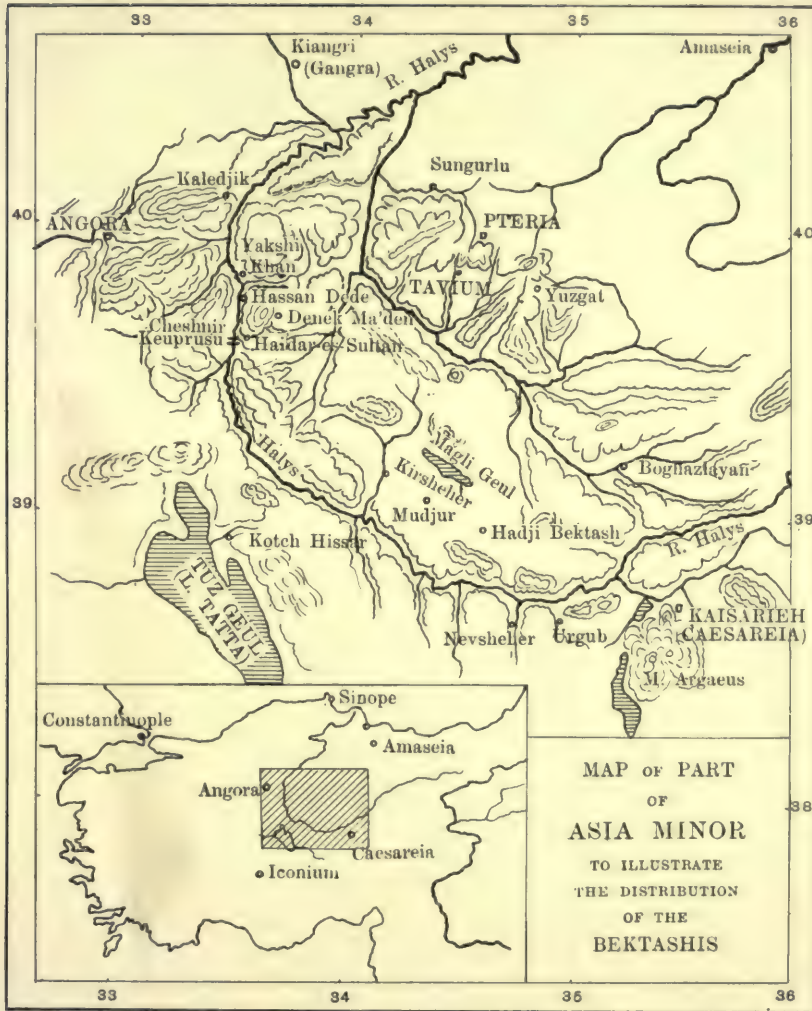
There is no more interesting study than that of the original population of Asia Minor, to which the name Proto-Armenian has been supplied. In many localities the early types appear to be well-marked, and if the Society desires to

continue the class of research which Mr. Crowfoot has so successfully conducted, I would suggest three districts in which I think interesting and important results would be obtained. (1) In the compact Kizilbash population of the Livas Vilâyet, especially in the Amasia Sanjok. (2) In the volcanic district north of Nigdeh, especially amongst the mixed Christian and Moslem population of the underground villages which I have described in Murray's *Handbook* (p. 168 ff). (3) Amongst the large Kizilbash population of the wild mountain district of Dersim which lies between Erzincan and Kharput. No great road has ever traversed this district, and it has always been a harbour of refuge for tribes driven into the mountains by invaders. The people are friendly, and the country contains fine scenery. I should wish to add my testimony to the importance of Mr. Crowfoot's work and express the hope that it may be continued.

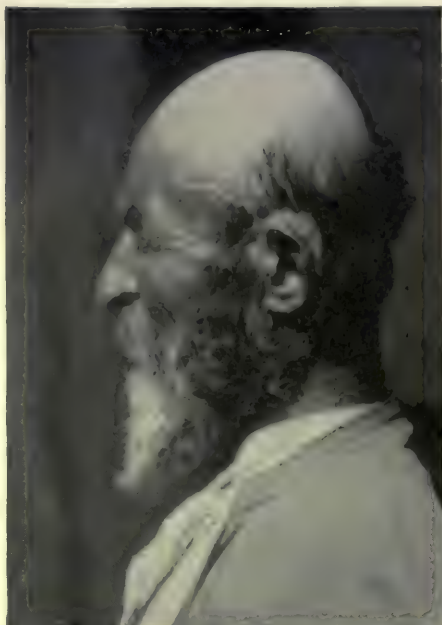
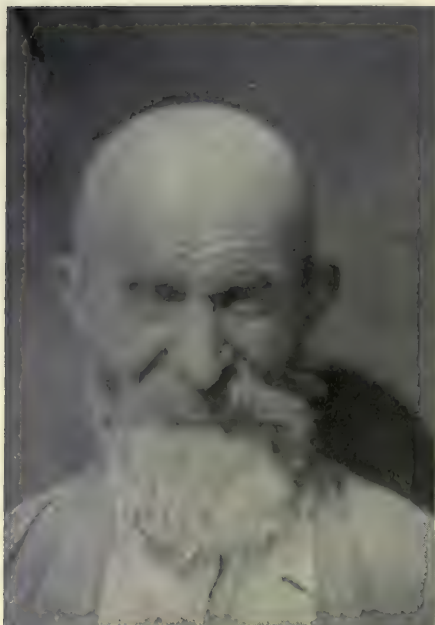
MR. G. L. GOMME: I cannot pretend to any knowledge of the subject by personal knowledge of the people, but perhaps I may venture to emphasise the importance of local ethnographical details such as the author has given us. When one gets physical types, and survival of customs grouped together in local studies, we are likely to get evidence of the most important nature. I was much struck with the priestess element in the well ritual, and was inclined to ask the author whether it was accompanied by any evidence of women of superior influence in the house. But Sir Charles Wilson partly answered this by an observation he made upon this point. I would however ask the author what he exactly meant by the term hamlet. Are these divisions tribal, or upon what basis are they made? He did not mention anything equivalent in the second village, and I should like to know what the term exactly implies.

DR. GARSON: The form of head which is shown by the photographs of these natives is a common one in cases where the skull is short, that is to say, brachycephalic people. The author did not mention the mean cephalic index of these natives, but they appear to me to be highly brachycephalic. There is no deformity present as far as I can judge by the pictures, the straight and flat appearance of the back of the head is due to the form of the skull and cannot be attributed to any form of cradle in which as children they have been laid.

SIR T. HOLDICH: In the course of his most interesting paper the lecturer referred to Khorassan as the probable original habitat of the Kizilbash. It may therefore be of some interest to point out that there are many Kizilbashis still resident in Khorassan—not the Khorassan of modern Persia, but the Khorassan of the Durani Empire (a century and a half ago) which included Afghanistan, Baluchistan and a part of the Punjab. This is Khorassan as it is probably known to the Kizilbash of Armenia now. The largest colony of these people is to be found at Kabul, where they are a peaceable trading community, Aryan in type and feature, merchants (mostly) by profession, Shiahs by faith, and invariably favourable (as are the Shiahs of all frontier communities) to England and British interests. The old woman who endeavoured to extract truth from the well for Mr. Crowfoot's benefit might answer, in his description, to any old Kizilbash woman of Kabul. There are (or were) a few Kizilbashis in the ranks of the Indian Army. I once possessed a Kizilbash orderly, drawn from the native cavalry, who was a specially smart and capable soldier. There can, I think, be little doubt about the connexion between the Kizilbash of Afghanistan and the Kizilbash of Kappadokia.



J. G. C. Anderson *del.*



MEHMED (1).

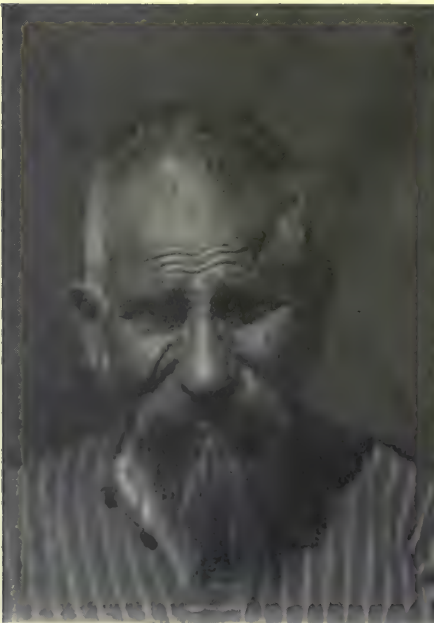


ABBAS (9).



VELÎ EFFENDI (10).

THE SHEIKH OF HASSAN-DEDE.



DJAFFIR (12).

BEKTASHI PORTRAITS. FULL FACE AND PROFILE.

ANTHROPOLOGICAL REVIEWS AND MISCELLANEA.

Readers of the Journal are invited to communicate any new facts of especial interest which come under their notice. Short abstracts of, or extracts from, letters will be published at the discretion of the Editor. Letters should be marked "Miscellanea" and addressed to The Secretary, 3, Hanover Square, W.

EXPLANATORY NOTICE.

To facilitate reference, and so to increase the usefulness of these "ANTHROPOLOGICAL REVIEWS AND MISCELLANEA," the Council of the Anthropological Institute has authorised the following amendments in their form.

In the first place, each item will be provided in future with marginal catch-titles in clarendon type, giving the name of the author of the note, or of the work under review, and also the subject to which the note or review refers. Each item will further be provided with a marginal number, by which it should be quoted, instead of by the page number.

In the second place, the "Reviews and Miscellanea" will in future be printed with a separate pagination from that of the rest of the *Journal*. This will permit the whole of the "Reviews and Miscellanea" in each annual volume to be bound up together at the end, and so will leave only one place where short articles are to be sought instead of two as at present.

In the third place, the separate pagination, above described, will make it possible to issue short copies of each sixteen-page sheet of "Reviews and Miscellanea," in advance, to any one who may desire to have early information of its contents. As it is further proposed to increase the amount of such matter so as to issue one such sixteen-page sheet *monthly*, the Institute thus acquires a monthly record of current anthropological work which should be of the utmost value not only to the Fellows, but to all English-speaking students of the Science of Man. The details of the proposed monthly issue will be found in the next paragraph.

"Man."

Anthropological Institute.

Man, a Monthly Record of Anthropological Science, published under the direction of the Anthropological Institute of Great Britain and Ireland. Imperial 8vo. 16 pages monthly from January, 1901. Published by the Anthropological Institute, 3, Hanover Square, London, W. 1

Under the above title, the Council of the Anthropological Institute proposes to establish a Monthly Record of progress in the various branches of the Study of Man. Its contents will include contributions to Physical Anthropology, Ethnography, and Psychology; the Study of Language and the earlier stages of Civilisation, Industry, and Art; and the History of Social Institutions and of Moral and Religious Ideas.

These various branches of study will be treated more fully, in proportion as they are less adequately provided for in existing periodicals. Classical Philology and Antiquities, for example, and the History of European Civilisation, which have recognised organs of their own already, will be treated only from the strictly anthropological standpoint; and, conversely, prominence will be given to those other studies, such as Prehistoric Archæology, and the History of non-European Cultures, which (in this country at all events) have not hitherto had a periodical record of their own. Special note will be taken, throughout, of those investigations which deal with the origins and the earlier stages of those forms of civilisation, which have eventually become dominant, and of the races among which they have arisen and developed.

Each number of "MAN" will consist of 16 imperial 8vo pages (*i.e.*, of the size and style of printing of the page on which this note is printed), with occasional illustrations in the text; together with a full page plate produced by colotype, lithography, or other such process.

The contents of "MAN," like those of the "Anthropological Reviews and Miscellanea" out of which it grew, will include:—

1. Original articles and notes on current researches and controversies: considerable space will be devoted to inquiries and correspondence.
2. Reviews of recent publications and critical summaries of the principal monographs in Journals and Proceedings of Societies.
3. Reports of the meetings of learned Societies at home and abroad.
4. Descriptive and critical notices of the acquisitions of the principal Museums and of private collections.
5. Bibliographies, as complete as can be made, with brief critical summaries, of various departments of study in turn; including foreign publications and periodical literature.

For convenience of reference, each article will be furnished with catch-titles in clarendon type, giving the subject and the author's name, and with a distinct reference number in the margin.

It will be seen from this brief account, that the object of the proposed publication is to provide a prompt survey of the work of existing organisations; to serve as a centre of communication and discussion to a number of small groups of workers in many different departments of the Human Sciences; and to bring within their reach a concise summary, at frequent intervals, of the work which is being done in the fields which border on their own.

As already indicated, "MAN" will be published by the Anthropological Institute of Great Britain and Ireland, and will be obtainable at its offices, 3, Hanover Square, London, W., on the following terms:—

1. By Fellows of the Institute, post free, at the rate of sixpence a number, or at an annual subscription of six shillings. Each Fellow will, of course, continue to receive as before, and in consideration of his ordinary subscription to the Institute, a complete copy of the half-year's numbers of "MAN," at the end of each half-yearly part of the *Journal*.
2. By Societies and Institutions which undertake to distribute not less than fifty copies to their own members, at the rate of 7s. 6d. per annum. It is believed that many Societies, which have no monthly bulletin of their own, may be glad to avail themselves of this opportunity of earlier publication of their proceedings, than their own fuller but less frequent reports can supply; and it will accordingly be a settled policy to

cultivate such relations both with Societies and with existing Journals, as may facilitate this result.

3. By the general public at the rate of one shilling a number, or at an annual subscription of ten shillings.

The first number of "MAN" will be published in January, 1901, and the Fellows of the Institute are invited to use their best endeavours to secure for the new departure the support which its objects deserve.

Proceedings.

Anthropological Institute.

A Summary of the Proceedings of the Anthropological Institute of Great Britain and Ireland: January—June, 1900.

2

Ordinary Meeting, January 9th, 1900.—Mr. C. H. Read, F.S.A., President, in the Chair. The Minutes of the last Meeting were read and signed. Messrs. Holt and Walhouse were appointed Auditors.

Professor Flinders Petrie's paper, "Sequences in Prehistoric Remains," was taken as read. It is printed in full in this *Journal*, vol. xxix (N.S. ii), pp. 295-301.

Mr. H. M. Chadwick, of Clare College, Cambridge, read a paper on "The Oak and the Thunder-God," which was discussed by Messrs. W. Gowland, M. J. Walhouse, Dr. Kingston, Mr. G. M. Atkinson, and the President. It is printed in full in this *Journal* (vol. xxx, pp. 22ff). A vote of thanks to Mr. Chadwick was carried unanimously.

Dr. Kingston communicated "Notes on some Caves in the T'Zitzikama or Outeniqua district, near Knysna, South Africa, and the objects found therein," and exhibited a number of objects which he had collected, and also lantern slides of natives and scenes in South Africa. The "Notes" are printed in full in this *Journal* (vol. xxx, pp. 45ff).

Mr. F. C. Shrubbsall contributed "Notes on Skeletons found in the T'Zitzikama and Knysna Caves," to which Dr. Garson added some further remarks. A vote of thanks to Dr. Kingston and Mr. Shrubbsall was carried unanimously.

Annual Meeting, January 30th, 1900.—(See *Journal*, vol. xxx, p. 1ff.)

Ordinary Meeting, February 13th, 1900.—Mr. C. H. Read, F.S.A., President, in the Chair. The Minutes of the last Meeting were read and signed.

3

The election was announced of Dr. F. P. Moreno, Professor Baldwin Spencer, and Dr. E. Dupont, as Honorary Fellows of the Institute. Messrs. J. W. Crowfoot, B.A., and L. R. Farnell, M.A., were elected Fellows of the Institute.

Mr. W. L. H. Duckworth read a note on the Congress of the German and Viennese Anthropological Societies held in Lindau in September, 1899, which is printed in this *Journal*, vol. xxix (N.S. ii), p. 314.

Dr. Reginald Koettlitz read his "Notes on the Somali, Galla, Abyssinian, and Shangalla People, and their Manners and Customs," which were illustrated by lantern slides and are printed in abstract in this *Journal* (vol. xxx, p. 50ff). The paper was discussed by Messrs. Ravenstein, Lewis, and others, and a vote of thanks to Mr. Koettlitz was carried unanimously.

Ordinary Meeting, March 13th, 1900.—Mr. C. H. Read, F.S.A., President, in the Chair. The Minutes of the last Meeting were read and signed.

4

The election was announced of Mr. Wm. McDougall as a Fellow of the Institute. On behalf of Mr. E. S. Hartland, the Secretary exhibited and explained a lantern

slide of a war god from Bonna in the Congo State, now in the Leiden Museum. The President noted that a very similar one was in the collection of Miss Mary Kingsley.

Mr. A. L. Lewis read a paper on "The Stone Circles of Scotland," which was discussed by the President, Mr. Gowland, Dr. Garson, and Mr. Gomme. It is printed in this *Journal* (vol. xxx, p. 56ff). A vote of thanks to Mr. Lewis was carried unanimously.

Mr. J. L. Myres exhibited a series of photographs and lantern slides of the Megalithic buildings of Malta and Gozo.

5 *Ordinary Meeting, March 27th, 1900.*—Mr. C. H. Read, F.S.A., President, in the Chair. The Minutes of the last Meeting were read and signed.

The election of Dr. W. H. R. Rivers and Mr. T. V. Hodgson, as Fellows of the Institute, was announced. The Secretary read a list of the books presented to the Institute since the last Meeting.

Dr. A. C. Haddon, F.R.S., and Mr. Charles Hose exhibited and explained a number of lantern slides, illustrating "Native Life and Customs in Sarawak." A discussion followed in which Mr. Hose stated, in answer to Mr. Myres, that he did not consider that the people of Sarawak were cannibals. A vote of thanks to Professor Haddon and Mr. Hose was carried unanimously.

6 *Ordinary Meeting, April 24th, 1900.*—Mr. C. H. Read, F.S.A., President, in the Chair. The Minutes of the last Meeting were read and signed.

The election of Mr. Anthony Wilkin, B.A., as a Fellow of the Institute, was announced. The Secretary read a list of books presented to the Institute since the last Meeting.

Dr. W. H. R. Rivers read a paper on "A Genealogical Method of Collecting Social and Vital Statistics," which he had practised in Torres Straits and British New Guinea. The paper is printed in full in this *Journal* (vol. xxx, p. 74).

Dr. A. C. Haddon, F.R.S., described a number of lantern slides illustrating the native industries of Torres Straits and British New Guinea (*cf. Journal*, vol. xxx, *Miscellanea*, Nos. 72-3, and *Geogr. Journal*, xvi, p. 414ff). The paper was discussed by Mr. G. L. Gomme, Dr. Japp, Mr. Gowland, and the President, and a vote of thanks to Dr. Rivers and Dr. Haddon was carried unanimously.

Mr. J. L. Myres read portion of a letter from Mr. Arthur J. Evans describing the important discoveries made by the latter in Crete.

7 *Ordinary Meeting, May 15th, 1900.*—Mr. C. H. Read, F.S.A., President, in the Chair. The Minutes of the last Meeting were read and signed.

The election was announced of Professor W. M. Flinders Petrie and Mr. C. G. Seligmann as Fellows of the Institute.

The President called attention to the great loss the Institute had sustained by the death of Lieutenant-General Pitt-Rivers, who had been twice its President.

The Secretary communicated a note by Mr. F. Haverfield, F.S.A., "On Certain Objects of Chalk from a Romano-British Site at Clanville, Hants." The communication was discussed by Professor Tylor, Mr. W. Gowland, Mr. J. Allen Brown, and the President, and it was agreed that there was no evidence of human workmanship on the objects which were exhibited.

Mr. J. Allen Brown, F.G.S., read a paper "On Stone Implements from Pitcairn Island," which is printed in full in this *Journal* (vol. xxx, p. 83ff). The paper was discussed by Professor Tylor, Dr. Montelius, Messrs. Howarth, Gowland, Rudler, and Lewis. A vote of thanks to Mr. Allen Brown was carried unanimously.

Mr. H. Stopes read a paper "On some unclassified Stone Implements," and exhibited lantern slides and a large selection of flint implements from his own collection. The paper will be printed in full in this *Journal*. After a brief discussion a vote of thanks to Mr. Stopes was carried unanimously.

Ordinary Meeting, May 29th, 1900.—Mr. C. H. Read, F.S.A., President, in the Chair. The Minutes of the last Meeting were read and signed. 8

The election was announced of Dr. A. H. Japp, LL.D., F.R.S.E., as a Fellow of the Institute. The Secretary read a list of books presented since the last Meeting.

Professor Oscar Montelius, of Stockholm, gave a discourse on "The Earliest Communications between Italy and Scandinavia," which is printed in full in this *Journal* (vol. xxx, p. 89ff). Discussion was carried on by the President and Messrs. Myres and Lewis. A vote of thanks to Professor Montelius was carried unanimously.

Extraordinary Meeting, June 5th, 1900.—Mr. C. H. Read, F.S.A., President, in the Chair. The Minutes of the last Meeting were read and signed. 9

The Secretary read a letter from Mr. Arthur J. Evans, giving further details of the recent discovery of Mycenæan remains in Crete.

Dr. J. G. Garson read a paper on "The Metric System of Identification used in Great Britain," which is printed in full in this volume of the *Journal*. The paper was discussed by Mr. MacIver, Colonel Garsia, Mr. Francis Galton, Major Clayton, Sir J. Crichton Browne, and Mr. Coffin. A vote of thanks to Dr. Garson was carried unanimously.

Ordinary Meeting, June 12th, 1900.—Mr. C. H. Read, F.S.A., President, in the Chair. The Minutes of the previous Meeting were read and signed. 10

Dr. J. Deniker, Librarian of the Jardin des Plantes, Paris, and an Honorary Fellow of the Institute, was welcomed by the President in suitable terms.

The Secretary exhibited, on behalf of Mr. H. Swainson Cowper, a primitive figurine from Adalia, in Asia Minor, and pointed out its resemblance to the "owl-faced figures" discovered by Dr. Schliemann at Troy. The figurine will be described and figured in this *Journal*.

Mr. B. H. Pain read a paper by Mr. W. L. H. Duckworth and himself "On a contribution to Eskimo Craniology," which was discussed by Dr. Deniker, Dr. Garson, Mr. Duckworth, Mr. Shrubsall, and the President, and is printed in full in this *Journal* (vol. xxx, p. 125). A vote of thanks to the joint authors of the paper was carried unanimously.

Mr. W. L. H. Duckworth read a paper "On a collection of Crania, with two skeletons, of the Mori-ori, or aborigines of the Chatham Islands; with a note on some Crania from the same islands in the Museum of the Royal College of Surgeons," which is printed in full in this *Journal* (vol. xxx, p. 141), and was discussed by Dr. Garson, Mr. Shrubsall, and the President. Mr. Shrubsall exhibited a series of drawings of Crania of similar races. A vote of thanks to Mr. Duckworth was carried unanimously.

Mr. John Gray, B.Sc., read a paper by Mr. James Tocher and himself, "On the Physical Characteristics of School Children and Adults in East Aberdeenshire," which is printed in full in this *Journal* (vol. xxx, p. 104). A vote of thanks to the joint authors of the paper was carried unanimously.

Autumn Session.—For reports of the Meetings of the Anthropological Institute in the months of November and December, see below, No. 120.

Anthropological Lantern Slides.**Anthrop. Institute.**

11 *Regulations for the Use of the Loan Collection of Lantern Slides, organised, jointly, by the Anthropological Institute of Great Britain and Ireland and by the Folklore Society.*

In order to encourage the study of anthropological subjects, and to provide teachers and lecturers with suitable illustrations, with the minimum expense, the two societies above named have appointed a joint committee to organise a Loan Collection of Anthropological Lantern Slides, for the use of the members of the two societies in the first place, and also of teachers and lecturers who are not members.

The Joint Committee has issued the following regulations for the use of the slides, which come into force in October, 1900:—

1. The lantern slide collection shall consist of slides which are (a) the property of individuals, deposited on loan, every depositor to have the loan, free of charge, of five slides in every year, in respect of every slide so deposited; (b) the property of the Folklore Society; (c) the property of the Anthropological Institute.

2. The slides shall be available for use, under the conditions hereinafter specified, (a) by members of the Folklore Society and members of the Anthropological Institute, who shall be responsible for the safe return of the slides borrowed, or for their replacement in case of loss or damage; (b) by non-members, introduced by a member of one or other society, who shall be responsible for the safety and return of the slides. But slides may be hired by non-members only in certain entire sets suitable for lecture purposes.

3. The slides shall be kept, for the present, in the rooms of the Anthropological Institute, and shall be under the charge of the Assistant Secretary, who shall send them out and receive them back as required.

4. The rate of hire for members, not being depositors, shall be threepence per slide prepaid, exclusive of postage; but one penny per slide shall be remitted if the slides are received back within three days from their despatch from the rooms of the Institute.

5. The rate of hire for non-members shall be five shillings a dozen prepaid: together with a deposit of five shillings as guarantee.

The Collection consists at present of between one hundred and two hundred slides, covering a variety of subjects. The thanks of the Joint Committee are due to a number of Fellows and others who have generously contributed to the collection already; in particular to Dr. A. C. Haddon, F.R.S., and to the Anthropological Photographs Committee of the British Association for the loan of a number of valuable negatives; and to Mr. E. S. Hartland and Mr. R. E. Guise, for their gifts of slides. Fellows of the Institute are invited to assist, by gift or deposit of slides, and by the loan of suitable negatives, in making it more complete and more generally useful. A subject Catalogue of the whole Collection will be published in due course.

Anthropometry: General.**Rivers.**

12 The communication which follows, from Dr. W. H. R. Rivers, of St. John's College, Cambridge, has been under the consideration of the Council of the Anthropological Institute:—

“ Nearly every year members of savage or barbarous races are exhibited in London in large numbers. At present, little or nothing is done to utilise the anthropological material which is thus brought to our doors, although in other countries, and especially in Germany, much useful work has been done.

"I have no doubt that the proprietors of exhibitions would be much more ready to grant facilities for investigation to the representatives of a scientific body than to private individuals, and I therefore wish to suggest to the Council of the Anthropological Institute that some steps might be taken to further the organization of work in this field.

"It seems to me that much would be gained if the proprietors of exhibitions would allow accredited representatives of the Institute facilities for investigation during hours when the exhibitions are not open to the public, and it is especially desirable that the facilities should be given soon after the arrival of the natives in England before they have been ruined for purposes of scientific study by the British public.

"Any measures which might be taken need not involve the Institute in any expenditure, as the necessary expenses for rewards, etc., would probably be willingly defrayed by the individual workers."

The Council of the Anthropological Institute has accordingly resolved to make representations to the proprietors of such exhibitions, and to issue letters of introduction to qualified observers who wish for special facilities. Information as to the arrival of natives for exhibition should be sent to the office of the Institute, 3, Hanover Square, W.

OBITUARY.

Mary Kingsley.

Toulmin Smith.

Miss Mary H. Kingsley, 13th October, 1862—3rd June, 1900. Communicated
by Miss L. Toulmin Smith.

13

This remarkable woman, whose untimely death on 3rd June last is a loss to science and humanity, was born in October 1862, at Islington, her parents removing the following year to Highgate, near London, where they remained till 1879. Her father, George H. Kingsley, brother to Charles and Henry Kingsley, was a doctor who travelled, and as his daughter shows in her charming Memoir, he was above all things imbued with the love of nature and natural objects. From her childhood upwards Mary was amidst books, chiefly scientific,—frequently referred to on receipt of the traveller's letters—of which she became an omnivorous reader; while her mother's numerous pets—cats, dogs and birds—and a rambling garden claimed her practical care and love for years. From zoology and natural history she eagerly took up modern works on ethnography and anthropology—Darwin, Huxley, and Tylor her masters. She pursued with ardour the study of mathematics and German, and dived into the mysteries of chemistry and electricity. At Bexley Heath, where the family lived for a few years, she became acquainted with the electrician, C. F. Varley, but in Cambridge, where they removed about 1884, the opportunities of study and discussion which she enjoyed enabled her to make excursions into many subjects attractive to her independent mind. Devotion to her invalid mother and anxiety for her father's health weighed heavily on her capable powers for some years, till in the spring of 1892 they both passed away. A visit to the Canaries shortly after restored her tone and gave her a taste of the joy of exploration into untrodden regions, for even here she did not content herself with the beaten path. Removing to London with her brother, she formed a plan of going to the coast of West Africa to study law and religion among the natives, and at the same time undertook a commission to collect freshwater fish and insects for the British Museum. Starting in 1893 with a sense of freedom, she visited St. Paul de Loanda, Labenda, and other places, and returned early in the following year, bringing a valuable collection, among which were many

new species, gathered amid dangers and difficulties in countries unexplored before. In high spirits and health she gathered her forces and started a second time in December, 1894, ascended the Bonny and Ogowé rivers, and climbed the Cameroons, and after a year's absence, brought back many valuable additions to her ethnographical and other collections, together with stores of information carefully noted. The two volumes *Travels in West Africa* (1897) and *West African Studies* (1899) contain her record of the results of these journeys; brimful of humour illuminating the serious study, they are authorities on the subject to-day. The traveller's abilities and intrepidity were recognised with gratitude by the West African traders, and soon attracted public notice; she lectured widely on many sides of West African life, especially desiring to make known the principles of African law and religion and property, which she did at Oxford, in 1897, and at Bristol (before the British Association) in 1898. She read a paper on the "Fetish view of the human soul" to the Folklore Society in June, 1897, and was elected a member of the Anthropological Institute in June, 1898; here she read no paper, but joined in discussions on West African subjects (March and April, 1899). Her unceasing efforts had important influence for good on West African affairs.

Her other published works are *The Story of West Africa*, an historical résumé written for H. Marshall and Son (1899), and a Memoir of her father prefixed to *Notes on Sport and Travel*, but recently issued (1900), a delightful presentment of George Kingsley, pervaded with his daughter's humour and transparent to her personality. On March 28, 1900, she landed at Cape Town, hoping to be of some use during the war, and to gather more materials; in Simons Town Hospital she found that nursing the sick Boers was her first call, and here to the deep and universal regret she succumbed to enteric fever herself on June 3. She was buried at sea on the following day by her own desire. Thus was cut short a most valuable life and a brief career of splendid performance; with a character full of womanly tenderness and unselfishness she was able and wise, dealing with great issues from a large-minded outlook, and to courage joined the modesty of true genius. West Africa, no less than science, must mourn an inestimable loss.

Mary Kingsley.

Kingsley Society.

14 *The Proposed National Memorial to Mary Kingsley.*

The desire has been very widely expressed among Miss Kingsley's many friends, and among the still larger number of those who knew her through her writings and lectures, to establish a permanent Memorial to her.

It is in a great measure owing to Miss Kingsley's writings and her absolutely unique researches into native customs and institutions that so much interest has recently been taken by the general public in West Africa. She herself took a deep interest in all that might in any way tend to the improvement of the conditions of life in that part of the world, both of Europeans and of the natives.

Liverpool, owing to its very large West African interests, was frequently visited by Miss Kingsley, who there, as also in Manchester, formed many close friendships with those engaged in the West African trade. Immediately after her death a movement was set on foot by certain Liverpool and Manchester merchants to perpetuate her memory by associating her name with a small Hospital for the treatment of tropical diseases to be established in connection with the Liverpool School of Tropical Medicine.

Other of Miss Kingsley's friends desire that her name should also be associated with a Society for the study of Native Customs and Laws, which was her first object and occupied the greatest part of her time and energy, and that "The Mary Kingsley

Society of West Africa" should be established to stimulate research and to collect from all sources information concerning West Africa.

Miss Kingsley held that the right way to bring out the full value of British West Africa is, not in the direction of trying to force European civilisation and customs on natives who already have a different, if rudimentary, social system of their own, but first to study this indigenous system, which must to some extent be suited to its environment, and then to select from this, and to develop the better and more useful elements. It is believed that much information of the required kind as to West African Sociology is already on record, scattered through the works of the older writers on those parts, as well as in more recent books of travel, in papers published in periodicals, in blue books, and in official reports; and a very great deal more may still be gathered by Government officials, traders, missionaries, travellers, and by the small but remarkable band of natives who are already educated.

It is proposed that the "Mary Kingsley Society" should employ a trained ethnologist, both to collect and arrange in scientific form the material which is thus already on record, and to institute and direct research for further material of the same sort; and it is intended that the Society, after the manner of the Royal Asiatic Society, should periodically publish the results which it obtains, and should thus provide additional knowledge by which European relations with West Africa may be most safely and effectively directed, with profit both to the natives and to the Empire.

Several meetings of Miss Kingsley's friends have been held in London to discuss the matter, and it has been decided that the memorial should include both the Hospital and the Society, and that an appeal should be made to the public for support to both; the subscriptions being assigned to either the Hospital or to the Society, according to the wish of subscribers.

Contributions for the "Mary Kingsley Memorial Hospital" should be sent to Mr. A. H. Milne, B. 10, Exchange Buildings, Liverpool, and for the "Mary Kingsley Society of West Africa" to Mr. George Macmillan, St. Martin Street, Leicester Square, London, W.C.

Unless specifically assigned by the donors, all contributions sent to Mr. Milne will be devoted to the "Mary Kingsley Hospital," and those sent to Mr. Macmillan to the "Mary Kingsley Society of West Africa."

The following have consented to act on the Provisional Committee:—Dr. E. Adam; Mrs. Antrobus; Mr. H. Balfour; Dr. C. F. Harford Battersby; Mr. J. Batty; Mrs. Bishop; Sir T. Lauder Brunton; Lady Brunton; Count C. de Cardi; Dr. Carter; Lady Chalmers; Mrs. Clark; Sir Andrew Clarke, G.C.M.G., C.B.; Viscount Cromer, G.C.B., G.C.M.G.; Major Leonard Darwin; Dr. J. G. Frazer; Rt. Hon. Sir George Taubman Goldie, K.C.M.G.; Mrs. J. R. Green (Hon. Sec.); Dr. F. H. H. Guillemard; Dr. A. C. Haddon, F.R.S.; Mr. E. Sidney Hartland, President of the Folklore Society; Mr. John Holt; Mr. J. A. Hutton; Mr. Everard Im Thurn, C.B., C.M.G.; Mr. James Irvine; Lady Johnston; Mr. Alfred L. Jones; Rev. Dennis Kemp; Sir Alfred Lyall, K.C.B., G.C.I.E.; Sir William MacGregor, K.C.M.G.; Lady MacGregor; Mr. George Macmillan (Hon. Treasurer); Mr. A. H. Milne (Hon. Treasurer); Mr. J. L. Myres, Secretary of the Anthropological Institute; Major Nathan, R.E., C.M.G.; Mr. G. W. Neville; Dowager Countess of Pembroke; Sir Frederick Pollock, Bart.; Mr. Charles H. Read, President of the Anthropological Institute; Professor William Ridgeway; Major Ronald Ross; Mr. H. Ling Roth; Sir John Smalman Smith; Miss Toulmin Smith; Colonel J. G. B. Stopford; Mr. J. St. Loe Strachey; Mr. F. Swanzy; Professor E. B. Tylor, F.R.S.; Mrs. Humphry Ward.

Oscar Baumann.

Felkin.

15 Oscar Baumann, Ph.D. 25th June, 1864-12th October, 1899. Contributed by R. W. Felkin, M.D., F.R.G.S.

By the death at Vienna of Dr. Oscar Baumann, who had been for some years Austrian Consul at Zanzibar, ethnology has lost an earnest student, a careful investigator, and a writer on the anthropology of Africa of considerable merit. Baumann was born at Vienna on the 25th of June, 1864, and his premature death has been greatly regretted by his friends and is a distinct loss to science. He studied at Leipzig, where he graduated as Doctor of Philosophy, and after serving as an officer in the Austrian army and preparing for exploration in Africa, he went to the Congo in Dr. Lenz's company in 1885.

After his expedition to the Lower Congo, Baumann went to Fernando Po, and since then his sphere of work was transferred to the east coast of Africa. He was there in 1888 during the rebellion in the German territory; he visited Usambara for the German East African Company in 1890; and he subsequently made a journey through Masai Land to the Victoria Nyanza. After his appointment as Austrian Consul in Zanzibar, he investigated and described Zanzibar and the neighbouring islands; in fact it was this work, which he performed when out of health, that led to his premature decease.

Apart from Baumann's geographical work, which was of considerable value, he rendered considerable service to anthropology by the careful descriptions he gave of the natives with whom he came in contact, their habits and customs, dwellings, weapons, and implements. His monograph on Fernando Po is certainly the most complete which has ever been written concerning that island and its inhabitants, and he strongly advocated its development. His description of the natives of Usambara and the neighbouring districts is the best which we possess, and the account of his journey to the Victoria Nyanza is replete with valuable information.

Baumann had great tact and sympathy with the natives. He soon won their confidence and was therefore able to get more accurate and detailed information respecting their ideas than any other travellers who have been in the same districts. Although his investigations were carried out in great detail, his writing is concise, and he manages to convey a very accurate general view of the condition of the people he describes.

Baumann made friends wherever he went by his sympathetic and genial disposition. He will be greatly missed. He died in Vienna on October 12, 1899. His principal works were as follows:—*Fernando Po*, 1889; *In Deutsch-Ostafrika während des Aufstands*, 1890; *Usambara und seine Nachbargebiete*, 1891; *Durch Masailand zur Nilquelle*, 1894; *Die Insel Sanzibar*, 1897; *Die Insel Pemba und ihre Kleinen Nachbarinseln*, 1899.

AFRICA.

Algeria: Ethnography.

MacIver and Wilkin.

16 An exhibition of Algerian and Kabyle objects was held in the rooms of the Anthropological Institute, from Monday, June 18th, to Saturday, June 23rd. Such an exhibition is a new departure on the side of the Institute, and was fully justified by the result, for a considerable number of Fellows and others took the opportunity of studying the large and representative collection which was thus put at their disposal, and it was eventually found desirable to keep the exhibition open even beyond the date originally announced.

The objects which were exhibited were collected during a recent journey by two Fellows of the Institute, Mr. David Randall-MacIver, B.A., Laycock Student of Egyptology at Worcester College, Oxford, and Mr. Anthony Wilkin, B.A., of King's College, Cambridge, whose results will, it is hoped, be shortly placed in full before the Institute and the general public.

The exhibits comprised :—

A. *Objects from the Chaouia tribes of the Aurès Mountains*, such as (1) the rough hand-made pottery, undecorated, and of very primitive forms, which is made by the women and is used for domestic purposes in all the villages of the Aurès; (2) specimens of all the typical kinds of jewellery made in the Aurès Mountains by the local silversmiths, the metal for which is obtained from old silver coins, while the coral, which is highly prized, is imported from the coast; (3) wool-work bags and cases, showing the native patterns; (4) snuff horns with incised patterns, wooden water-bottles, flutes, traps for animals and birds, and so forth.

B. *Objects from the Kabyle tribes in Little Kabylia*, east of the Sahal River, and in Great Kabylia, near Fort National. (1) The most important exhibits among these are the specimens of finely decorated pottery, some classes of which are identical with the pottery of the prehistoric Egyptians (*circa* 6000 to 5000 B.C.). The manufacture of this pottery is confined to certain villages in the heart of the mountains. The exhibitors visited these villages to obtain their specimens, and studied in detail the processes of the manufacture. (2) The brushes and pigments used for painting the pottery were shown, and also a series of photographs illustrating the stages in the life history of the pots. (3) Other exhibits included specimens of silver-work like those from the Aurès, and specimens of wood-carving and models, baskets, knives, etc.

The exhibits were accompanied by a large number of photographs, including :— (1) Views of the mountain country, villages, and houses of these Berber tribes; (2) the arts and industries of the people, *e.g.*, pottery making, silver-working, spinning, weaving, pressing of olives and manufacture of olive oil, etc.; (3) the dolmens and other megalithic remains from four different sites, with drawings of the skulls found in the dolmens by General Faidherbe in his excavations; (4) anthropological portraits of a large number of Berbers, taken in their own villages.

Morocco: cf. J.A.I. XXIX (N.S. II), p. 252.

Lang.

Ġinn and Fairies. Communicated by Andrew Lang.

17

On reading Dr. Westermarck's interesting account of the beliefs of the people of Morocco about *Ġinn* (*Journ. Anthropol. Inst.* XXIX (N.S. II), pp. 252-269), I was struck by the close resemblance of Arab to Celtic superstition. The *Ġinn*, in almost all respects, correspond to the People of Peace, or Fairies, of Irish and Scottish folklore. Nobody, perhaps, has yet tried to derive our fairies from Totemism, and Dr. Westermarck has refuted that curious theory, as applied by Professor Robertson-Smith to the *Ġinn*. In my humble opinion the *Ġinn* are Fairies, neither more nor less. Doubtless they are much older than Islam, or Christianity, but the Arab account of *Ġinn*, like the Scotch theory of fairies, is influenced by the prevailing religion. Dr. Westermarck writes, "The *ġnān* form a special race of beings, created before Adam. In various respects, however, they are like men. They eat and drink, they propagate their species, they are subject to death. . . . They even form sexual connections with men."

Let us compare the Rev. Robert Kirk's account of the Fairies (*circa* 1690). Mr. Kirk's *Secret Commonwealth of Elves, Fauns, and Fairies* was edited, from a MS. by Scott, in 1815, and by myself, in 1893. "The *Sith* . . . are said to be

of a middle nature betwixt Man and Angel. . . . They have Children, Marriages, and Deaths even as we. . . . They are clearly seen by men of Second Sight to eat at Funerals and Banquets. . . . There be many fair ladies of this aerial order, which do often tryst with young men . . . in the quality of lightsome paramours."

So far, then, the *ǵnún* and the Fairies are identical. The *ǵnún*, at Fez, live in an old fort. So they do in Ireland, to this day, and Mr. Kirk mentions that they abide in the motes, or mounds, near churches. Such motes, hard by the church, exist at St. John's Town of Dalry, Parton, and Balmacennan, in Galloway, being the bases of ancient fortified dwellings. "Their native country is below the earth," says Dr. Westermarck. "The earth being full of cavities or cells," says Mr. Kirk, "these are their ordinary dwellings." The *ǵnún* "live in tribes or nations, of which each has its sultan." "The Fairies live in Tribes and Orders," and the Fairy king and queen, "aristocratical rulers," are known to everybody. "The *ǵnún* . . . may assume almost any shape they like." The Fairies "grovele in different schapes," says Kirk. Whirls of sand or dust are caused by *ǵnún*. They are also attributed, in Scotland, to Fairies, who ride, causing the *tourbillon*, to the cry of "Horse and Hattock." The *ǵnún* produce diseases by shooting arrows. So do Kirk's Fairies. "Their weapons are much of stone, like to yellow soft Flint spa (*sic*) shaped like a barbed arrow-head," and Mr. Kirk treasured several of these neolithic weapons. The *ǵnún* are afraid of salt and steel. "Iron hinders all the operations" of the Fairies, and a piece of iron is put into the bed of a woman in labour. As to salt, a dish thereof is put on the breasts of corpses before burial, to keep off evil influences. The Bible is as efficacious as the Koran. The *séance* witnessed by Dr. Westermarck is the old Maori and modern spiritual *séance*, down to the "materialised" hand of the *ǵinn*. "The *ǵnún* are frequently supposed to be guardians of hidden treasure." Kirk gives Fairy examples, and I have met cases both in Sligo, and, oddly enough, on Flodden Field.

Obviously the *ǵinn* are fairies, and the fairies are *ǵinn*. But nobody will say that the fairies were evolved out of Totem animals; and, indeed, though they can take many shapes, we hear little of them in animal form. On the other hand ghosts of men dead do appear very frequently, in this country, as beasts, and I am inclined to think that both fairies and *ǵinn* are more or less evolved out of ghosts. At all events, whoever wishes to derive *ǵinn* from Totems ought also to derive fairies from Totems, a thing which probably not the wildest Totemist will dream of doing. The Totem is almost as much overworked as the Sun, and the Spirit of vegetation in modern theories. Meanwhile Dr. Westermarck has, perhaps without thinking of it, proved the identity of a great province of Scottish and Arab or Moorish folklore.

Egypt: System of Writing.

Griffith.

18 *On the System of Writing in Ancient Egypt.* Communicated by F. Ll. Griffith, M.A., to the Anthropological Section of the British Association for the Advancement of Science. Bradford, September 6th, 1900.

Egyptology has now reached a position among the sciences from which it may contribute trustworthy information for the benefit of kindred researches. Egyptian writing consists of Ideographic and Phonetic Elements, the signs serving as—1, Word-signs; 2, Phonograms; 3, Determinatives. The highest development shown is an alphabet, which, however, is never used independently of other signs; it is apparently not acrophonic in origin; it represents consonants and semi-consonants only, vocalisation not being recorded by Egyptian writing. No advance can be detected in the system from the beginning of the historic period to the end, notwithstanding

some improvements in practical working which facilitated the use of cursive writing. Phonograms derived from word-signs. The end of the native system was brought about by the gradual adoption of the Greek character—beginning, perhaps, in the second century A.D. If any radical improvement was ever made in the Egyptian form of writing, that improvement must have taken place at or after adoption by another people: *e.g.*, some have supposed that our alphabet was derived by the Phœnicians from Egypt; but any such derivations are at present entirely hypothetical.

Although the Egyptian system of writing may not be actually a stage in the history of our alphabet, it throws a strong light on the development of the alphabetic system: and the survival of its pictorial form (for decorative purposes) enables us to recognise the highly ramified connections between the forms and meanings of characters to an extent which is impossible at present in any other system, whether in Mesopotamia, China, or elsewhere.

The results of recent Egyptian philology indicate therefore that Egyptian was originally a Semitic language, though its character changed early. The main lines of the grammar being at length established, the materials for a complete dictionary are now being collected and classified.

Egypt: Language.

Erman.

Die Flexion des ägyptischen Verbums. Von Adolf Erman. (*Sitzungsberichte der Preussischen Akademie der Wissenschaften.* XIX. pp. 317ff.)

19

At a recent meeting of the Berlin Academy of Sciences, whilst dealing with some technicalities of Egyptian grammar, Professor Erman gave expression to some new philological results which are of importance both to the historian and to the anthropologist. His own studies had already in 1892 rendered a close connection between Egyptian and the Semitic tongues hardly dubious. But at the same time the most striking characteristic of the Semitic languages, namely, the derivation of the vocabulary from roots of three radicals, seemed to be absent from Egyptian, which appeared, on the contrary, to have a preference for biliteral roots. This difficulty has now been removed by the researches of Dr. Sethe upon the Egyptian verb (see Kurt Sethe, *Das ägyptische Verbum*, of which two volumes have already appeared, and a third, containing indices, is in preparation). It has become clear that most Egyptian biliteral verbs have become such through the decay of a weak consonant, and were accordingly, in their origin, trilateral. As a further consequence of this discovery, fresh similarities in the vocabulary have been brought to light, greatly adding to the evidence hitherto available. Professor Erman has now no hesitation in classing Egyptian among the Semitic languages. It is noteworthy that this conclusion has been reached without any investigations into the field of comparative syntax, which would, as any one acquainted with the languages in question must know, indubitably lead to valuable results pointing in the same direction.

Professor Erman then turns to the historical aspect of his conclusion. He compares the movement which carried the Semitic idiom from Arabia to Egypt and East Africa with the Mohammedan invasion which overran the same countries in the seventh century of our era. The parallel is complete, except that whereas the later stream of conquest gave birth to one extensive, yet united nation, the more ancient failed to do so. This difference he attributes with great show of reason to the fact that the Mohammedan invasion imposed a religion, while the earlier invasion did not. The greater decay of the Semitic idiom in Egypt he assigns to an original difference of race. As to this race, he surmises that they resembled those Nubians who live in the barren stretches between Assuan and Dongola. These have preserved their one language intact in this region which no invader has taken the trouble to conquer;

and it is a language unrelated to any known idiom, and doubtless—like the Basque—the relic of a tongue which once covered a far wider area. Here we probably have the original tongue of the indigenous Egyptian. Thus Professor Erman arrives at the supposition that the Egyptians were “semitised Nubians,” a conclusion which has been advanced on other grounds, and which will probably be corroborated as soon as the archaeological evidence has been properly sifted.

A. H. G.

Egypt.: Physical Anthropology.

Macalister.

20 On *Perforate Humeri in Ancient Egyptian Skeletons*. Communicated by Professor A. Macalister, M.D., F.R.S., to the Anthropological Section of the British Association for the Advancement of Science. Bradford, September 11th, 1900.

In sorting out our Cambridge collection of Egyptian bones, I have noticed the frequency of supra-articular perforation of the humerus, especially in the bones from Libyan graves. I did not begin to count the number of examples until more than three-fourths of the series had been put away in store-cases, but out of the last twenty boxes opened, I found that out of 682 humeri, 390 were perforate and 292 imperforate. The percentage of perforation is therefore 57·2.

This exceeds anything hitherto published. Of ancient North Americans the percentage of perforate bones out of 300 specimens is 40 per cent. In one collection from the Gila Valley, in Arizona, 48 perforate bones were found out of 89, a percentage of 53·9; but this is exceptionally high, and the number of bones is not large. In our Cambridge collection, when I began to count, I found out of the first 115 bones that 65 were perforated; so, had I none but this series, the percentage would have come out 56·5.

The Libyans may therefore, I think, claim to hold the record. In our dissecting room there were three instances out of the last hundred bodies examined. (Other statistics will be found in Messrs. Matthews and Lamb's article on the subject. *Mem. Amer. National Acad. Sci.*, vi, 217.)

The authors just quoted are most probably correct in considering this as an acquired character. The youngest specimen obtained was in a humerus of a child probably 7 years old. I have not seen any genuine approach to this condition among 100 fetal humeri examined for the purpose. As far as I know, it has never been found in a fetal bone.

It is a perforation of the shaft well above the epiphysal junction line. The distal extremity of the diaphysis thickens below the hole down to the place where the epiphysis is set upon it.

It is always in the intra-articular part of the olecranon fossa, below the line of reflexion of the synovial membrane that crosses the middle of the fossa. It is, therefore, quite distinct from the vascular holes with which Topinard associates it, as these are always extra-articular (the vessels are chiefly derived from the inferior profunda).

Of these perforate humeri, 172 were right, and 218 were left. As far as could be determined from size, shape, and from the accompanying pelvic bones, 192 were male, and 198 were female. There is thus the same preponderance of left and female over right and male bones, which was noticed by the describers of the Hemenway collection, leading one to speculate as to the nature of the work which predisposed to the perforation—the mill, the shadoof, or the mattock.

As to the sizes of the holes, they were mostly oval or elliptical, with the long axis transverse or nearly so, and the distribution of these sizes are shown in the accompanying table:—

Length of long axis in mm.	Male.		Female.	
	Right.	Left.	Right.	Left.
1-4	17	9	12	10
5-9	54	58	52	63
10-12	14	37	22	39
over 12	1	2	0	0
Total	86	106	86	112

In the few recent examples, which were large, the hole was actually open in the recent state; when small, it is usually closed by membrane; 27 were young bones with an un-united upper epiphysis, 5 co-existed with the supra-condylar process. The opening is veniform or belobed in 33.

This note is only preliminary, as the subject is sufficiently important to require still further study. I have, however, been able to determine that while in ordinary extension and flexion, the tops of the processes do not press upon the humerus, yet by forced extension and forced flexion contact can be made to take place, especially when the elbow is forcibly extended, with the hand in the position of pronation.

Egypt: Prehistoric.

Forbes.

On a Collection of Stone Implements in the Mayer Museum, made by Mr. H. W. Seton-Karr, in mines of the ancient Egyptians discovered by him on the plateaux of the Nile Valley. By H. O. Forbes, LL.D. From *Bull. Liverpool Mus.* II, 3-4, p. 77ff. See Plate A, which, by the courtesy of Dr. Forbes, reproduces figs. 1-8 of the paper. 21

The earlier discoveries of Mr. Seton-Karr in Somaliland, and a preliminary notice of the collection here described, will be found published in this *Journal*, vol. xxvi, p. 65, 109; xxvii, 90.

The circumstances of the discovery and the ancient flint mines are described and illustrated by photographic plates. The implements are classified and described according to types; and the question of their probable date is discussed. Dr. Forbes concludes that the deeply stained patina, and the apparently "palæolithic" forms of these implements "cannot be depended on to fix the date of stone implements where there is no possibility of determining the geological age of the strata whence they have come, and in the absence of associated faunistic remains," and that none of the surface "palæolithic" implements from Egypt and Somaliland have yet been proved to belong to that period; and that probably the bulk of them are much later. J. L. M.

Egypt: Prehistoric.

Legge.

The Carved Slates from Hierakonpolis and elsewhere. By F. Legge. *Proc. Soc. Bibl. Arch.*, XXII (1900), pp. 125-139, with 9 plates; which are reproduced by permission in Plates B. C. D. 22

Mr. Legge has earned the gratitude of students of prehistoric Egypt by this full and well-illustrated account of all the known examples of these peculiar and interesting objects. Two fragments indeed are omitted as not certainly belonging to the same group (one in the Louvre, *Rev. Arch.* III, Ser. ix, p. 37ff: the other at

Gizeh, *Ægyptiaca* (*Festschr. für G. Ebers*), 1894, p. 124): the rest, seven in all, are reproduced from photographs.—The Roman numerals refer to the plates in *Proc. Bibl. Arch.*, XXII: and the letters B. C. D. to the plates which accompany this review.

- Plate B { I. Gizeh: from "the lowest layers below the temple" at Hierakonpolis.
(Obverse and reverse.)
II. Part in the Louvre, part in the British Museum, perhaps from Abydos: {the three surviving fragments are represented pieced together.
III. Oxford (Ashmolean Museum): from the same site as that on Plate I.
(Obverse and reverse.)
Plate C { IV. Louvre: provenance unknown: cf. Henzey, *Bulletin des correspondences Helleniques*, XVI, 312: attributed to Abydos, by Sayce, *Proc. Soc. Bibl. Arch.*, XX, 99. (Obverse and reverse.)
V. Gizeh: provenance unknown: fragmentary: cf. de Morgan, *Recherches sur l'origine de l'Égypte*, II, Plate iii.

Plate D = VI. British Museum: provenance unknown: to this belongs an unpublished fragment in the Ashmolean Museum which Mr. Legge publishes separately (*Proc. Soc. Bibl. Arch.*, XXII, p. 270, Pl. X).

Plate C = British Museum: provenance unknown.

Plate D = VIII and IX give details and illustrations of the representations on the Slates.

The author discusses the purpose for which these slates were used. He criticises the theory of Mr. Quibell and Professor Flinders Petrie (cf. *Nagada and Ballas*, Plate L), that they were palettes, and regards the ring which forms the central ornament of all the more perfect specimens, not as the margin of a receptacle for paint, but as a representation of the sun; suggesting that it may have been filled with gold foil or glass to heighten its significance. Comparing the form of the more perfect tablets with that of the shields represented on that in Plate II, he proposes to explain the tablets themselves as representations of such shields, used for ritual purposes, like the *ancilia* of Rome.

From the occurrence among the objects figured on these tablets, of the double-bladed axe, which he regards as peculiar to Asia Minor, and from the representations of greaves and what he regards as woollen clothing (both appropriate to a mountaineer people), he infers that the makers of the tablets were pre-dynastic invaders of Egypt, coming from Asia Minor, and probably of the same race as those who founded the civilisation of the Ægean, and perhaps of the Western Mediterranean. He gives, however, no evidence of the limitation of the double axe to Asia Minor; and the argument from greaves and clothing justifies his inference even less. J. L. M.

Egypt: Prehistoric.

Petrie.

23

Note on a carved Slate. By Professor W. M. Flinders Petrie. (*Proc. Soc. Bibl. Arch.*, XXII, 140-1.)

To Mr. Legge's paper summarised above (No. 22), Professor Petrie adds a note on the topography of the fortified enclosures represented on the fragment from Gizeh (Pl. C. V: = Legge, *l.c.* Pl. V: de Morgan, *Recherches*, II, Pl. iii). Each of these enclosures contains a single object, which in each case can be recognised as a form of a known hieroglyphic symbol. Following this clue Professor Petrie identifies the enclosures with towns (four in Middle Egypt, and three in the Delta), whose names contain the phonetic equivalents of the symbol. He defends, against Mr. Legge, his view that the carved slates are ceremonial paint-palettes and compares the elaborately carved mace-heads which are found with them (*Hierakonpolis*, Plate xxvff). J. L. M.

Egypt: Rekhmara.**Newberry.**

"*The Life of Rekhmara.*" By Percy E. Newberry. London: Constable and Co., 1900.

24

In a recent work which has justly attained some degree of celebrity, the doubt was expressed whether the real history of Egypt was susceptible of satisfactory investigation, owing to the lack of a literature in that land. It may be that the writer was misled by the ambiguity of the word "literature," or misinformed as to the extent of the occurrence of literary evidence in Egypt. However this may be, the first instalment of Mr. Newberry's work on the tomb of Rekhmara contains a mass of undoubted literary evidence of a kind which will shed a flood of light on the nature and methods of internal administration under the Pharaohs of the eighteenth dynasty.

Rekhmara was governor of Thebes, and vizier of Upper Egypt in the reigns of Thothmes III and Amenhetop II. Mr. Newberry prefaces his work by an interesting account of Rekhmara's family, showing that the office of vizier had been hereditary in it for three generations. It need hardly be said that the laudatory inscriptions in Rekhmara's tomb give us no true insight into his personal character. The conventional virtues of the Egyptian aristocrat are therein ascribed to him, as well as some special traits such as would well become a man of his high station. It is at this point that the above-mentioned generalisation concerning Egyptian history comes nearest to the truth. Literature in general communicates what bald official lists and what that which an eminent anti-archæologist has termed "crockery" do not, namely, personal ideals and personal policy. There is, truly, little literature of this kind to be discovered in Ancient Egypt. Yet it should be remembered that in an oriental country such as Egypt variations of individual character, even if they existed to any considerable degree, can have possessed nothing of the importance that they possessed in Greece or Rome. On the other hand, the general stress of custom must have tended to break down individual peculiarities, and to have moulded individual character in its own likeness. Indeed, progress in Egypt, when left to itself, seems to have proceeded much more automatically than elsewhere: the writer whose view has here been criticised himself stated in another place that all great impulses to progress there have been the outcome of foreign intervention. So that the absence of an insight into Rekhmara's character in no way impairs the importance of the historical material provided in Mr. Newberry's book.

As regards the official functions of Rekhmara we have a long account, in which the various details of his duties as vizier are specified under twenty-seven heads. From this we learn that Rekhmara judged both in civil and criminal cases, that he had to attend to the assessment and payment of taxes, as well as to the levying of troops, and the appointment of subordinate officials of all kinds. Another important text describes the mode of investiture followed in the case of viziers, and the advice which the king was wont to give on such occasions. The particular application of these texts to the person of Rekhmara is slightly lessened by the fact that they are found, at least in part, in duplicate in the tombs of other viziers in the Theban necropolis. However all the copies belong to pretty much the same period, and the fact of their repetition is to some extent a guarantee of their truthfulness. In a group of interesting scenes the occupations of Rekhmara in his position of steward of the Temple of Amen are depicted. As such, he had to superintend all buildings devoted to the god, as well as the revenues that accrued to the god's vast estates.

Of about equal importance to that of these documents is a wall-painting representing the receipt of the taxes of Upper Egypt. The mayors of townships, the

commandants of fortresses, and the surveyors of districts are depicted each with some of his subordinates, and the amount and nature of each one's contribution are recorded together with his name and origin. The circumstantial way in which the several items are detailed, as well as the moderate figures accompanying them, render it highly probable that the scene is constructed from official documents. The taxes were paid in local produce, oxen, fruits, or cloth, as well as in measured blocks of gold and silver, the Egyptian equivalent of coinage. Future study may succeed in deducing from this scene the relative importance of the various localities of Upper Egypt at this epoch. A particular case may be mentioned. The town of Denderah is represented by no official, though the surrounding district possesses its own surveyor. Now Professor Petrie's recent excavations point in the same direction. Few monuments of the eighteenth dynasty were unearthed. Probably therefore Denderah was an almost deserted town at this time.

Such are a few of the results to be gleaned at once from this important work. Only some of the more striking facts could here be pointed out. Future research is required to obtain from the ample material here provided its full yield. Some of the inscriptions and scenes had previously been published, but neither accurately nor fully. The get-up and arrangement of Mr. Newberry's book are all that could be desired. It is much to be hoped that he will continue the work which he has begun so admirably, and continue it speedily. If he does so, he will confer a great benefit on philologist and historian alike.

A. H. G.

Egypt: Modern.

Worsfold.

25

The Redemption of Egypt. By W. Basil Worsfold, M.A. London: George Allen. 1900.

A hurried glance through Mr. Worsfold's pages would leave upon the mind the impression that his book is superfluous, that its "popular" aspect has nothing new about it, and that his observations on the ancient and modern architecture and on the industrial regeneration of the country can be found elsewhere in the works of the great authorities. But a more patient investigation of the contents of *The Redemption of Egypt* leads to the conclusion that this book is by no means superfluous. It appeals to a class of readers who rarely open an original authority, and it contains many shrewd and valuable criticisms. In short the work is "popular" enough to attract readers and scientific enough to teach them a great deal as they read. *The Redemption of Egypt* belongs to a fortunately increasing category of books in which the author assumes that his public is neither uninstructed nor unwilling to be further informed. To the anthropologist, as might be expected, Mr. Worsfold makes no direct appeal. Still there is not a little in what he says to interest and attract the student of mankind.

The chapter on the mosques of Cairo "as illustrating the development of Arabian Art in Egypt" is particularly good in this connection, though it would be impossible here to give even a *resumé* of it. Mr. Worsfold quotes many examples to show the debt that the architecture of the Arab owes to European, Persian, and Coptic models, but he scarcely lays sufficient stress on the fact that the Arab, in his native Arabia, had practically no architecture at all. It was (as usual) a folk-wandering, a mighty flux and fusion of races, which, under Mohammedan auspices, gave rise to Saracenic Art.

We disagree with Mr. Worsfold when he says of the statues of Prince Rahotep and his wife Nofret that they had "just such faces as we might see to-day in France, Italy, or even in England." From our own recollection of these statues we should say

they were exceedingly good types of upper class ancient Egyptians, and that, as Mr. Worsfold adds, though they have neither the "effeminacy of Asia," nor the "animality of Africa," still they have even less the characteristics of any European race. One interesting point our author does not note. Rahotep is painted red-brown and his wife yellow; so in Egypt of to-day the man who labours in the fields is dark as copper wherever his skin is exposed to the sun and wind, but, when he first strips for the shadoof, he reveals as light a colouring as his wife who sits within the home and only goes abroad (for water) at dawn or dusk.

On another point we must join issue with Mr. Worsfold when he states that "the civilisation of ancient Egypt was the highest to which any people had attained before the development of Greece and Rome." Every year that passes shows the Euphrates Valley to have been the home of a very high culture before even the Pyramids were reared. It is moreover by no means certain that the prehistoric Ægean peoples did not surpass in progress their contemporaries in the Valley of the Nile, and the belief gains ground that Egyptian civilisation was only one among many civilisations, the one which has been best preserved, perhaps, but by no means assuredly the best.

Again, it is hardly fair to speak of the Pyramids as man's first essay in architecture, for they are not even the first essay in architecture of the Egyptians themselves.

Mr. Worsfold does not hold out much hope that Englishmen will ever make Egypt their permanent home. Physically, this does not seem impossible, morally, it is perhaps (as in India) inadvisable.

The copious extracts from ancient authors are excellent and are even a new feature which is worthy of the flattery of imitation.

Much as we should like to quote many of Mr. Worsfold's interesting statements about modern Egypt, the schools, the money-lenders, the cultivation of sugar and cotton by European Companies, the irrigation works of English engineers and contractors, they hardly fall within our province. It will be enough to ask: "How long will the coming increase in the water-supply suffice for the needs of a rapidly increasing population?" "How is the condition of the fellahin to be naturally improved when in the future, as at present, they will be reduced again, after a temporary respite, almost to the verge of starvation?" Would it not be well, while we lay out millions on works which will add to Egypt, out of Nature's inexhaustible storehouse, little but dusky peasants and shining sovereigns, to spend a few thousands in restoring to the light of day what can never be replaced?

The coloured illustrations and the splendid pencil drawings add another attraction to an attractive book, but why are the Pyramids depicted as if from a standpoint several hundred feet high, when there is no such standpoint nearer than the Citadel of Cairo? However, when so much is good it is ill to cavil at trifles, and *The Redemption of Egypt* takes a place among the very best modern books on that fascinating country.

A. W.

Bantu Languages.

Meinhof.

Grundriss einer Lautlehre der Bantu Sprachen. By Carl Meinhof. From the *Journal of the German Oriental Society*. Leipzig, 1899, 8vo. Presented by the Author. 26

In Africa there are six subdivisions of the language-field, and the Bantu languages occupy the whole of the continent south of the equator, with the exception of the small area of the Hottentot Bushman forms of speech. This learned essay treats exclusively of the Bantu languages.

In the beginning of this century we knew very little of the scientific aspect of languages; it was sufficient to find the meaning of the words in the dictionary, and to be able to group these words into sentences for the purpose of speaking, reading, and writing. Things are very much changed now; the structure of the different forms of speech is studied scientifically, and along the great line of languages from the English and the schoolboy's Latin on the extreme right to the articulate sounds emitted by the voice of the South African barbarian the study of a linguist is subdivided into "sound-lore," "word-lore," "sentence-lore," and the essay, which we are passing under review, is the "lautehre," or "sound-lore," of the Bantu languages of South Africa. It was necessary to make this statement to enable the general reader to understand what the essay was about.

What is "sound-lore"? Ideas are formed in the brain of the human race by a divine power conceded to that race alone amidst the multiform animal creation. It is a divine gift, but the machinery employed by each man to convey his ideas to his fellow-man is essentially human. The wind is propelled up the larynx and out of the mouth, modified by contact with the teeth, tongue, throat, or palate, and becomes the vehicle of the ideas, according to the fancy or necessity of different tribes and individuals, each separate form of speech differing essentially from any other.

The author of the essay has applied himself to six Bantu languages, the Suto, the Swahili, the Hérero, the Duala, the Konde, and the Sango. The speakers of these languages are barbarians, and had no form of script. Their words were caught up by the European stranger as they fell from their lips, and entrusted to the Roman written characters, modified so as to suit the sounds of each language. The author discusses the sound-lore of each language at a considerable length, and most elaborately, but no one but a profound linguistic scholar could follow him in the details, and no doubt on so deep a subject the last word has not yet been said, and the reading of the details is about as interesting to the general public as the reading of a dictionary.

At the close of the essay is a statement (1) of the best known Bantu word-roots, (2) of the literature of the Bantu language-family, which has come into existence in the last half-century; with (3) a copious word-index. It is a most meritorious work, and students of African languages will be grateful to the author. R. N. C.

Central Africa.

Henderson.

27 *Northern Nyasaland.* By the Rev. James Henderson. (*Scottish Geographical Magazine*, 1900, pp. 82-9.)

The author summarises observations accumulated during several journeys made between 1895 and 1899 in the territory which lies west of the northern half of Lake Nyasa. The following extracts are of anthropological interest.

"The produce of the native gardens in the coast plains and on the lower slopes are cassava, sweet potatoes, ground-nuts, several kinds of millet, maize, beans, pumpkins, tobacco, bananas, and plantains; as well as, where internal influences have been felt, rice, lemons, pineapples, papaus, custard-apples, and mangoes. A kind of hemp is grown by the fishermen for making nets, and in the swampy plains a pith-tree called *mabingwe* is found, which yields a substance nearly as light as cork, used for floats. In the neighbourhood of Bandawe, the wild arrow-root plant is plentiful. The Konde people round Karonga ornament their villages with rows of cotton trees. . . . The quality of the soil, except where it is alluvial, is poor, and where it has been long continuously under cultivation, as in the Usisya Plain, it appears to be quite exhausted." (p. 83.)

"Until four or five years ago, sheep and goats were the only food animals kept on the lake shore except at Karonga, where cattle were always abundant, but since then cattle have been successfully introduced into most of the villages. There is little doubt that with the practical disappearance of the buffalo, owing to the rinderpest, the tsetse-fly has also been got rid of from districts that were formerly infested." (p. 83.)

"Lion Point, which separates Florence Bay from Young Bay, presents, at the water's edge, a yellowish white face of soft rock, which has been hollowed out by the action of the waves, and by weathering. It contains a number of small caves and grottoes. Some of these are covered with crude representations in charcoal of native pictorial art, showing figures of men and animals in Egyptian-like profile, some stationary, others in motion." (p. 84.)

"The inhabitants [of the Tumbuka terrace plateaus behind the shore plains], who are of the Tumbuka, Henga, and to some small extent Poka tribes, show some skill in agriculture, cultivating successfully all the crops in common use on the lake shore." (p. 85.)

"The Tumbuka and Henga tribes are skilled in the smelting and working of iron. Their ruined furnaces, spread over a wide area in surprising numbers, give evidence both of the general prevalence of iron ore, and of the extent to which the working of it was carried on in the past." (p. 87.)

"Passing on now, we come to consider the mountain range which we saw in rear of the northern section of the Tumbuka plateau, to which the name *Nyika* is generally applied. *Nyika* is not a proper name, as used by the natives. It is simply 'the uplands,' and in that sense it is in very common use. Tanganyika, I venture to think, is nothing more or less than *Nyanja ya Nyika*, 'the lake of the uplands.'" (p. 87.)

"The Poka inhabitants of the Nyika plateau, probably the aborigines of the country, and very low in the native scale of civilisation, have little skill in cultivation. Keeping a few goats and sheep, more for barter than for use, they subsist mostly on pease. Their huts are built with a view to concealment, and are formed by scooping out the ground, and covering the hole with sticks and turf. Placed, as many of them are, among the heaps of rock *débris*, it is almost impossible to detect them from any distance. On the west, the gardens are made in the open, but near the east face they are to be found on the steep sides of the gorges." (p. 88.)

"As a whole, the district, which I have been describing, is very thinly peopled. The inhabited country is only a fraction of the uninhabited. From the head of the Henga valley to the Rumpi River there is not a single village. The few Poka villages scattered over the Nyika plateau are hardly worth counting as occupations. The Vipsya [the southern extension of the Tumbuka plateau] is entirely without people, and in the far west, until the traveller has descended a long distance into the Loangwa valley, he rarely encounters more than two or three villages in a day's march. The great centres of population are Bandawe among the Tonga tribe, Ekwendeni and Hora among the Ngoni and Tumbuka tribes, Kondowi among the mixed Henga and Poka, and Karongu among the mixed Henga and Konde. No exact census has yet been made." (pp. 88-9.)

J. L. M.

Central Africa.

Lloyd.

In Dwarf Land and Cannibal Country. By A. B. Lloyd. London: Fisher Unwin, 1899. 8vo. pp. 385. Price 21s.

28

Mr. Lloyd's route starts from Zanzibar, or takes him through German East Africa

to Uganda. His object was to take up lay missionary work under the Church Missionary Society in Taro, west of Uganda; but the Soudanese rebellion deranged his plans, and, his health giving way, he was ordered home. He decided, however, to return by way of the Congo, and so to explore a new bit of the dense forest country of Central Africa. He was fortunate in establishing friendly relations with the pygmy people of the forest, and was able to collect a considerable amount of information as to their habits and beliefs, though he was not allowed to approach their settlements. He found them to be about 4 feet in height, but powerfully built; "broad chested, with muscles finely developed, short thick neck, and small bullet head; the lower limbs were short and massive to a degree. The chest was covered with black curly hair, and most of the men wore thick black beards. Each carried either bow and quiver of arrows, or short throwing spears. Round their arms they wore iron rings, and some of them had these round their necks also. The women were very comely little creatures, and most attractive, with very light skins, lighter even than the men, being of a light tan colour; they had the usual flat nose and thick lips of the Negro, and black curly hair; but their eyes were of singular beauty, so bright and quick and restless they were, that not for a second did they seem to fix their gaze upon anything. They were smaller than the men."

The "Cannibal Country" which gives to the book the second half of its title is that of the Bangwas, between Avakubi and Basoko. Here too Mr. Lloyd succeeded in making friends with the natives, and was much impressed with their "great depth of character," from which he hopes great things later on.

The book contains several good maps, and is well illustrated, though a canoe accident destroyed a number of Mr. Lloyd's best plates. J. L. M.

South Africa.

Keane.

29 *The Boer States: Land and People.* By A. H. Keane, F.R.G.S. London: Methuen and Co., 1900. 8vo. pp. 313. Presented by the Author.

Mr. Keane may fairly claim to have written a book of more than ephemeral value. He has approached his subject with competent knowledge and an open mind, and has fairly and successfully, as we conceive, to be just to the Boers as well as to the other races inhabiting South Africa. His account of the features of the country is concise, but to the point, and in his account of the Boers he shows very instructively how racial origin, and system of government, no less than geographical environment have moulded their character, mental and physical. The book is one which well repays perusal, and is sure to correct opinions hastily formed on imperfect or one-sided information.

E. G. R.

South Africa.

Hartland.

30 *On the Imperfection of our Knowledge of the Black Races of the Transvaal and the Orange River Colony.* Communicated by E. Sidney Hartland, to the Anthropological Section of the British Association for the Advancement of Science. Bradford, September 10th, 1900.

This important paper was designed to lead to a discussion of the legal and social status of the native races of South Africa, in view of the legislative and administrative changes which must follow the recent annexations. Our information on the customs, institutions, and beliefs of the native races of those countries is derived chiefly from fragmentary notices by missionaries, which are not to be implicitly trusted. The black peoples of South Africa are Bantus and Bushmen Hottentots. Though there was a general similarity of custom among them all, yet there are important differences of which we know little. After going into an account of the punishment

of theft, Mr. Hartland discussed the marriage customs. The prohibited degrees of kindred appeared to be much wider than with us, though most of the tribes were polygamist. One of the modes of oppression of blacks in the Transvaal had been the refusal to recognise those marriages. That policy we should be compelled to reverse; and we must start by informing ourselves what marriages were regarded by the natives of each tribe as legal. The most valuable evidence we possessed on the subject was contained in the report of the Commission appointed by the Cape Government twenty years ago. In this they had information on the custom of delivery of the bride, known as "Lobola" or "Ukulobola," and the question was whether the transaction was a bargain and sale of the bride, and, therefore, according to our law, immoral, or if not, what it was. A church missionary of twenty-three years' experience described it as being the "direct sale of the girl" in its purest state. But other missionaries had said they could not condemn the custom. He could not now go into the question of beliefs, which was, however, not less important than that of customs. We ought to govern the native races according to their own laws and not by ours. If we had so much difficulty in understanding their laws, no wonder they had so much difficulty in understanding ours. They were so much attached to their own customs, which were, indeed, part of themselves, that they could not imagine any others. Such, then, were some of the difficulties experienced by Europeans, even when long resident among the natives and intimately acquainted with them in regard to the real meaning of their institutions. An accurate study of the native customs, institutions, and beliefs was an urgent necessity both for missionaries and for purposes of government. In view of these difficulties the committee of the section of anthropology had decided to propose to the general council of the British Association, that that council should suggest to her Majesty's Government that as soon as the condition of the Transvaal and the Orange River Colony should permit, and prior to any legislation affecting the natives, a commission should be appointed to inquire (*a*) into the customs and institutions of the natives of those States; and (*b*) into the relations between the natives and the European settlers, with power to make recommendations for the purposes above referred to; such commission to consist, so far as possible, of persons familiar with native life in South Africa, and, in addition, of at least one person, unconnected with South Africa, of recognised eminence in the study of savage customs and superstitions in general.

In the discussion which followed:

Mr. CROOKE, in warmly supporting the proposal for an ethnographical survey of these races, ventured to caution its advocates against depending too much on official action. Except in some isolated cases the attitude of our Colonial and Indian Governments towards anthropological inquiries had been characterised by apathy and indifference. They had been satisfied to muddle along, and preferred to collect such information piecemeal so as to meet the necessities of some immediate legislative projects. Facts thus hastily collected were forgotten as soon as the need for which the effort was made had passed away. The business of that section was to persevere in endeavouring to induce the Indian and Colonial Governments to adopt a more sympathetic attitude towards ethnographical inquiries. The best chance of success in the present investigation was not to permit it to continue purely official, but to associate in the inquiry the leading anthropologists of South Africa, and to enlist the aid of all persons qualified by practical knowledge and experience to advise the commission on the questions which it would be its business to investigate.

Dr. HADDON congratulated Mr. Hartland on the temperate and judicial tone of his statement; as it was often difficult to express in a temperate manner the attitude

of white men to natives. He himself recently had the opportunity of seeing the other side of the picture; in British New Guinea that excellent late Governor, Sir William Macgregor, following the traditions of Lord Stanmore, then Sir Arthur Gordon, in Fiji, caused his resident magistrates to inquire into native customs, laws, and beliefs, and these investigations were printed in his annual reports. From New Guinea Dr. Haddon went to Sarawak, where the present Rajah, who was an irresponsible sovereign under the protection of Her Majesty, carried on the system of government inaugurated by that remarkable man Rajah Sir James Brooke. In Sarawak the native customary laws were respected by the Rajah. It was most important that we should take the present favourable opportunity to study and record the traditional laws and customs of the natives of the Orange River and Transvaal Colonies both for the sake of science and of the natives themselves. J. L. M.

West Africa: Jukos, &c.

Pope-Hennessy.

31 *Notes on the Jukos and other Tribes of the Middle Benue.* Contributed by Lieutenant H. Pope-Hennessy.

The writer was sent in September, 1898, from Jebba, on the Niger, to join an expedition under Captain Lynch, the object of which was to penetrate from Ibi, on the Benue, into the kingdom of Bauchi. He was at some disadvantage in collecting information, as he was but slightly acquainted with the Hausa language, and all his inquiries had to be conducted through an interpreter; but great pains were taken to verify the statements of the latter by all available means.

There are two routes from Ibi to Bauchi, the more usual going by Waze, but the shorter by Jepjep and Pongru. The latter, however (which was that traversed by the writer), is not popular with native traders, for it passes through the territory of three pagan tribes, the *Tangale*, the *Urku*, and the *Ligori*, which hold the hills and have a bad name for raiding weak caravans. In the same district the writer had the opportunity of observing the *Jukos*, who live about the town of Gatri.

In all cases the notes follow as far as possible the order of the questions in *Notes and Queries on Anthropology*.

I.—The *Tangale* Tribe.

This tribe inhabits the hills some fifteen miles east of the main road between Gatri and Pongru, and makes raids from its strongholds on caravans passing along it.

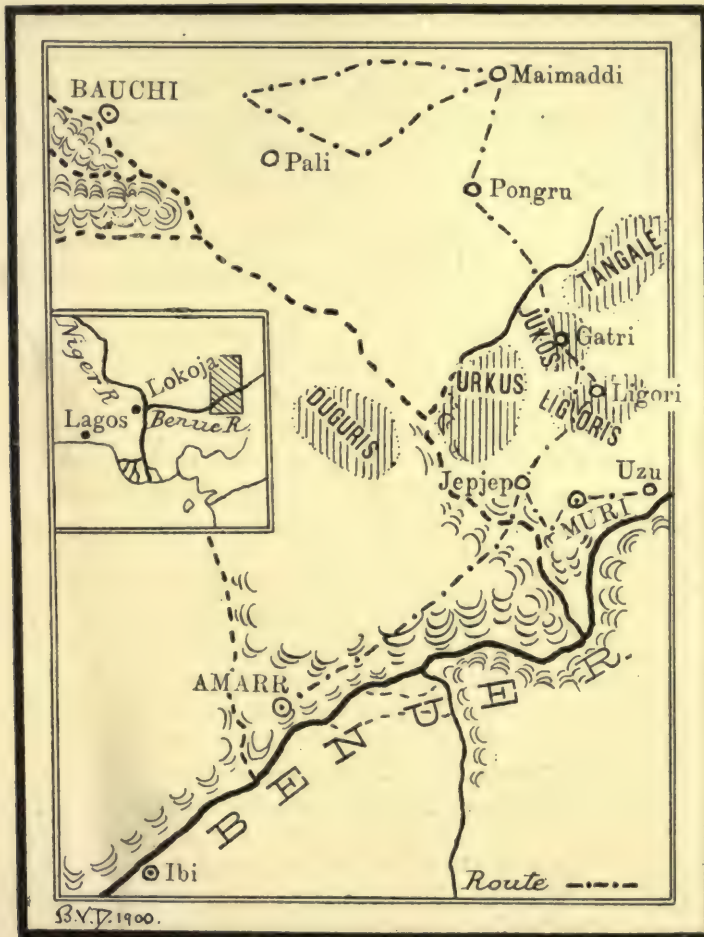
Mode of Subsistence.—The *Tangale* are farmers, and use a hoe with a long shaft for turning up the soil. They grow guinea-corn and a white cereal of which the writer could get no specimens. Besides these two grains they commonly eat a soup made of an infusion of the crushed leaves of the plant which is called *noné* in Hausa and *adau* by the *Jukos*. They also eat meat, and own cattle, sheep, and poultry. Fire is produced by flint and steel; no one is specially charged with the duty of preserving it.

These villages consist of mud-walled, grass-thatched huts. These lie scattered about, and are never surrounded by a wall, for the *Tangale* boast that no enemy can penetrate their country. The sexes live in separate huts, those of the men having low doors; but there is no separation of the sexes at meals, except as referred to later. The beds are made of a tree split in half and fashioned into rude planks.

Head-hunting and Cannibalism.—The *Tangale* are said to be head-hunters; and one of their customs is that no young man may marry until he can produce a head. They appear to stoop to stealing the heads of dead men and even buying them when unable to get them for themselves. While the author was at Gatri a native was executed and his body exposed on a hillock about half a mile from the

town. During the night the head was cut off as report said by a Juko of the town, who sold it to a Tangale friend of his, who wanted to marry, but had not yet killed a man. This Tangale would probably produce the head as a trophy of his own valour.

When they raid a caravan their first care is to cut off the heads of the slain and make off with them; then, if undisturbed, they come back for the bodies and the loot. The bodies are taken away to the neighbourhood of their villages, and all the grown men of the village (but not the women and children) assemble, and after a drinking bout of *peto* (beer made from guinea-corn) boil and eat the bodies. While doing this



Scale of Engl. Miles.

0 50

PORTIONS OF COUNTRY NOT SHADED ARE IN THE HANDS OF FULANI.

they sit on stones arranged in some pattern, either a circle or an oval. Separation of the sexes is rigidly enforced at these cannibal feasts, though there is nothing of the kind at ordinary meals.

The heads of their victims they put separately in little earthen pots, the flesh being previously cleaned off, and probably eaten, and the pots are then shut up and buried. But every new moon the Tangale brave who has a head thus buried grinds up a little corn, mixes it with water, and puts it into the pot with the head as an offering, at

the same time praying to the head. A brave who has several heads keeps them in separate pots, and goes through the same ceremony with each head.

Burial Customs and Religious Beliefs.—The Tangale bury their dead at full length, and nothing is interred with the corpse. An ordinary man is only mourned for by his friends, but a chief or king is prayed to for some considerable time—a year or so. They are said to believe in some sort of future state for both sexes, with ideas of reward and punishment; but clear and trustworthy information about their religious beliefs was difficult to obtain. They believe in several gods, their principal deity being *Bokange*. After him there are *Tamfa*, *Murshofo*, *Batú*, and *Wambai*, who are peaceful gods and do not like war; and *Takurdo*, *Tangalan*, and *Tal*, who, with *Bokange* himself, are war gods, and help the Tangale in their fights. They have wooden idols, not carved to resemble the human face; these they put in a hut and surround with a circle of stones, on which the worshippers sit. They grovel to the idols and pray usually for good crops and many travellers to kill, at the same time offering fowls and food to the idol. They do not pray every day—only when they want something.

They have medicine men who can foretell future events by seeing them reflected in a bowl of plain water. They do not know of any magic to enable them to kill their enemies at a distance.

In common with many other tribes in this district, they believe that roan antelope, waterbuck, and giraffe are unlucky to kill, having “bad *juju*”; the elephant, however, has no *juju*.

Hunting and Fighting.—Their weapons are two spears (*narr*), a round shield of elephant hide (*kolong*), a double-edged knife worn on the right hip, and an axe with a half-moon blade set in a shaft some 30 inches long, which is worn over the left shoulder. They never use bows or arrows, and never poison their spears for fighting—though they do so for elephant-hunting.

Their method of attacking a caravan is to lie in ambush in the high grass by the roadside, with sentries up in trees. The sentry warns them of the approach of the caravan by a low whistle. When within stabbing distance they drive their spear into a man, and transferring it to the left hand, hack the head off with the half-moon axe. Having got the head, the successful Tangale makes off with it and puts it in a place of safety, being afraid of his own friends stealing it. Only when the danger is over do they come back to the bodies and booty. A noted warrior wears a leopard-skin on his back; a great hunter, on the other hand, has no distinguishing mark.

Clothing.—As a general rule the men go stark naked in the bush; as a protection from thorns, however, they tie a bit of sheepskin round their groin. A chief usually wears a cloth wrapper. The sole clothing of the women is a bunch of green leaves before and behind. They sometimes wear plain ivory bangles. The women mark their faces with many small circles, and the men their faces, arms, and body. The front teeth of the upper jaw are filed in both sexes on reaching puberty. The hair is cut so as to leave a broad band down the middle of the head. Both men and women wear bits of stick through their ears; the women also wear a stick in the cartilage of the nose. The hair of the men is reddened with a dye called *kwoya* in Hausa and *shannu* in Tangale.

II.—The Urku or Wuruku Tribe.

This tribe lives among rocky hills a few miles to the south-west of the Tangale, and on the other side of the caravan road.

Appearance.—Two Urkus seen by the writer at Gatri were aged about seventeen

and twenty-seven respectively, and were 5 feet 7 inches and 5 feet 9 inches in height. The hair of the younger man was concealed by a cap; that of the other was cut short, except a low plaited band down the middle of the head, ending in a tail 3 inches long, which was brought over the forehead. The faces of both were marked by two lines of small vertical lump-cicatrices. Neither of them was circumcised, nor had his teeth filed. The most noticeable thing about their faces was the great breadth of forehead, the width between the cheek-bones, and the small and pointed chin. The younger man had a tight collar of horsehair round his neck, and both wore several bangles of white metal on their arms. They carried on their shoulders axes with triangular blades, covered with fine wavy lines.

Mode of Subsistence.—The Urkus are farmers and hunters. They live in round mud-walled huts with thatched roofs, and their villages are walled with loose stones. Their food consists principally of rice and guinea-corn, which they grow for themselves; millet (in Hausa *ghirro*) they do not know. The sexes eat apart, the women indoors, the men in the bush. Though the men feed apart, they do not mind a stranger seeing them eat, or eating with them; differing in this from the Jukos of Gatri, who are most careful not to be seen eating or drinking by any but the men of their own tribe.

In hunting they use spears and bows. One of their methods of hunting is as follows:—A shallow hole is dug in a game path; in this a running noose is placed, supported so that, when the beast puts its foot in the hole, the noose catches the leg. The free end of the rope is fastened to a log, which impedes the movements of the animal sufficiently to enable the hunters and dogs to overtake it, when it is despatched with spears.

Cannibalism.—The Urkus are commonly reported to eat the prisoners whom they take in fights with the neighbouring tribes. If many are taken it is said that they fatten up those who are not wanted for immediate consumption and keep them for future use. The writer heard, but only at second hand, that owing to the dearth of salt in their country this tribe is in the habit of putting slaves to work, grinding corn and so forth, until they perspire; they then rub the meat they are eating against the slave's body, making use of the salt in the perspiration.

A few Urkus are found as slaves in the Mohammedan states bordering on their country, but the Fulah are loth to travel in the Urku district because of their savage reputation and cannibal propensities.

Religion.—The Urkus met by the writer were very shy and frightened when asked about their religion. They appear to worship ten gods, but none of these are war-gods; they look after the crops and farms. The Urku word for a god is *Kindema*, and the name of their principal deity is *Kottong*. They pray at the time of the new moon, when they sacrifice sheep and fowls. Their idols are of wood, and are kept in little mat houses surrounded by a circle of stones.

III.—*The Ligori Tribe.*

This tribe lives to the south of Gatri and the Jukos, and south-east of the Urkus. The writer passed through the town of Ligori on his journey up country, but did not take any notes, as he hoped to do so on the return journey. Circumstances, however, compelled him to hurry through, and he had no further opportunity of studying these people.

They are marauders of a mild sort, and levy a toll on merchandise passing through their country. They are pagans, but not cannibals, and do not go naked like the Tangale and Urkus, but wear a cloth.

Their crops are very good, and in fact, wherever he went, north of the Benue,

the writer was struck by the industry and the good crops of the pagan tribes, which are everywhere better than in the Mohammedan countries of this part of Nigeria. But none of the three tribes here described grow millet at all, though it is so common in the neighbouring Fulah and Bornu states.

IV.—The Juko Tribe.

The Jukos are a pagan tribe of the Middle Benue River, and were at one time an united and powerful nation. Tradition has it that they ruled a large empire extending from Bauchi in the north to the Allah Katsena River, south of the Benue. At present they have sadly fallen from their high estate—if, indeed, they ever had any—and are more often met with as fishermen and canoe-men in the district around Ibi. Those, however, with whom the writer became best acquainted are the inhabitants of Gatri (or Gateri), where, not mixing with other tribes, they have in all probability maintained their customs in greater purity than elsewhere.

Mode of Subsistence.—The Jukos are mainly farmers, and their food consists of guinea-corn and yams, together with the game they take by hunting.

Some Juko elephant hunters use a poisoned spear fired out of a flintlock trade-gun, but these are the exceptions, the usual weapons being spears and arrows, which are dipped in a poison the basis of which is a shrub called *konkoni* in Hausa, which is a principal ingredient in all the poisons I saw, whether used by Jukos, Hausas, Fulahs, or Bornus. The Jukos do not use the *burtu*, the favourite device of the hunters around Ibi, which consists of a toucan's bill stuck into a piece of wood, covered with black leather, curved to represent the head and neck of the bird. By fastening this on to his forehead and enveloping himself in a dark indigo-dyed robe, the hunter is often able to stalk up to within a few yards of antelope. The Jukos of Wukari use snares and pitfalls, but the Gatri people do not. The Juko hunters of Sanderde, Wurio, Gassol, and Malla use a spear with a detachable iron head to which a rope is attached, called *narru* in Juko and *songo* in Hausa. They use dogs for hunting small antelope or gazelle.

The Benue Jukos catch fish by driving them into V-shaped traps made of mats and placed in convenient shallows. They also use nets, but are said not to use hooks, though they spear fish.

Some natives say that there is no particular observance at cooking; others, that the men prepare their own food. They all agree as to the following statement:—

A Juko man will only let another Juko man see him eat, and will neither eat nor drink in the presence of any stranger or woman of his own people.

To eat their food the men go apart into the bush to little mat houses called *Kungoni*, of which each man has his own. The women and small boys eat in the huts in the towns, the custom of going apart to eat only being obligatory on boys of age to marry.

Fire is produced by flint and steel—no one in particular is entrusted with the duty of looking after it.

The houses are circular, 10 to 20 feet in diameter; walls of mud and straw with conical thatched roof. A family occupies several huts in a mat-walled compound. (a) The entrance hut is called a *samfa*. It is a large hut with two doors. Visitors are received and lodged there, but women never enter it, and a woman wishing to leave the enclosure has to go round the *samfa* instead of walking through it as a man would. (b) The owner of the house has a hut to himself, to which the wives come in turn, each for two nights. (c) The women have their own huts, several women living in the same, and their children with them. (d) A hut is set apart as kitchen. A wife

during the period of menstruation is not allowed into a man's hut, but has to live in a small hut outside the wall of her husband's compound, where food is brought to her and she stays three or four days.

In the houses the Jukos sit on mats, and only the king may use a sheepskin. The beds are like those of the Hausas as described by Rev. C. Robinson in *Hausa Land*.



The town of Gatri is of an irregular shape (perhaps meant for a square), is enclosed by an earthen wall, with banquette, ditch, and thorn fence (abbatis) in front.

The principal cultivated plants are:—Guinea-corn (*dza*), millet (*ghirro* in Hausa and *meynu* in Juko), beans (*sur*), ground-nuts (*fenzan*), tobacco (*taba*). Indigo is not grown. Digging is done with iron hoes, and for reaping a small axe is used, which has a splayed triangular blade set in a club-like handle, and is called *pallam*.

Religion and Customs.—In his inquiries into the religion and customs of the Jukos the writer was very greatly hampered both by their shyness in speaking of such matters and by the Mohammedanism of his interpreter, to whom the religion of the Jakos was a work of the devil and not worth bothering about. The only Juko who gave much information was also not a very trustworthy informant. He entertained the writer and had travelled much, and, as he himself said, had lost the beliefs of his people without picking up any other. This man was the only Juko whom the writer encountered who would drink in his presence. From him he gathered that the Jukos believe in one god called *Sido*, who is thought by each man to be present in his own fetish room.

One method of praying appears to be as follows:—A man, having cut off the head of a bird (probably a fowl), winds himself up in rope till he is a sort of human cocoon and none of his skin is visible. Then with the bird's head in his mouth about dusk he runs out of his hut making a noise, through the bird's head, which sounds somewhat like "Hugh, hugh, hugh." When the women hear this they all run away, saying, "God has come."

Killing the King.—The town of Gatri is ruled by a king, who is elected by the big men of the town as follows:—When in the opinion of the big men the king has reigned long enough, they give out that "the king is sick"—a formula understood by all to mean that they are going to kill him, though the intention is never put more plainly. They then decide who is to be the next king. How long he is to reign is settled by the influential men at a meeting; the question is put and answered by each man throwing on the ground a little piece of stick for each year he thinks the new king should rule. The king is then told, and a great feast prepared, at which the king gets drunk on guinea-corn beer. After this he is speared, and the man who was chosen becomes king. Thus each Juko king knows that he cannot have very many more years to live, and that he is certain of his predecessor's fate. This, however, does not seem to frighten candidates. The same custom of king-killing is said to prevail at Qunonde and Wukari as well as at Gatri.

As may be inferred from the above, the king is very much under the influence of his big men, so much so that if a present be given to him by custom, he is compelled to give some of it to each of his principal subjects. Before anything of importance is undertaken, a council is called of these principal subjects, and without their consent nothing of any importance is done. Every day the king gives two or three pots of

beer to his advisers. The writer was informed that before they decide anything they pray a great deal, and offer sacrifices, but of what sort his informant would not say.

Marriage.—A Juko wedding, which may take place at any time of the year, is accompanied by a feast to the friends, with much drinking of *peto* or guinea-corn beer. The price of a wife is high—two or three slaves. There are many slaves in Gatri, mostly Urkus or Duguris. If a wife does not get on with her husband she can demand to be sold to any man she likes, provided such a one is willing to buy her; the original husband then gets back his outlay. Should no one be willing to marry her she can still leave her husband, who thus loses the money he invested in her. The king has as many wives as he likes. The writer was told that they numbered from 100 to 1,000, and that they pass on to his successor, who keeps the pick of them, and sells those he does not want.

A king can take any unmarried girl he likes, but never another man's wife. If a Juko woman is caught in adultery with another man, the matter is brought before the king in council, the usual decision being that the seducer pays to the king half of the value of a slave and to the injured husband twice the cost price of the wife. He is then at liberty to keep the woman.

Land Tenure.—A man wishing to buy a farm goes direct to the owner and settles with him without reference to the king. Farms vary in size from the plot of land tilled by the farmer's wives to the large holdings of big men worked by many slaves.

The price of a farm which would take ten slaves to till it is about 10 "covers" of indigo-dyed native cloth, or in our money 30s. to 35s. A man who wishes to clear a piece of bush to make a farm does so without asking leave of any one.

When a Juko from elsewhere comes to Gatri the king allots him a piece of land gratis on which to build a house.

The price of a good house is about 10 covers (60s.) of native cloth and love gown—about 46s. or 50s. This is paid to the seller, not to the king.

A tax of 10 per cent. in kind on all crops is paid to the king, who himself owns farms. There is no tax on houses, horses, etc.

Succession.—One half of a man's personal property, such as horses, cut corn, etc., passes at his death to male heirs, the other half to the king. When a male dies without male heir, the king takes one half of his farm, the other half going to the female heirs. If he has a brother, the brother takes the land, giving the boys a small portion.

Administration and Justice.—The care of the town wall is entrusted to the people of the town, each man being allotted a section, for the good order of which he is responsible.

Theft is punishable by the king seizing the culprit and his wives as slaves, and confiscating his property to himself. The injured man gets nothing.

Arts and Manufactures.—These are practically confined to the manufacture of rough hand-made pottery and of guinea-corn beer, which in Hausa is called *peto*, and by the Jukos *jais*, and of tobacco and snuff; with the latter they are accustomed to mix potash. Salt is imported.

Jujus.—The Jukos put faith in "medicine" and charms as helps to hunting. For instance, a Juko hunter told the writer that the night before he goes to hunt elephants he goes apart into a little hut (fetish house?), and makes offerings and prayers to a "stick" (he was speaking Hausa and used the word *itachi*), saying, "I want blood, I want blood." He then takes a "medicine"—which is different for different animals—and making four cuts in his left arm, rubs the "medicine" in. This helps him to see the beast next day. From various Hausa and Beri Beri (Mohammedan)

hunters the writer compiled the following list of jujus for game :—The lion, leopard, bush-cow, rhinoceros, elephant, hartebeeste, gazelle, oribi, wart-hog, and hippo have no *juju*. The *juju* of a giraffe is in his head, so it is very bad luck to kill him, and when hunters kill him they leave his head in the bush, though they bring in the rest of the carcase for sale; nor will they touch the head on any account. The writer was very anxious to get a complete specimen of the beast, as it is reported to be of a different species to that of South Africa. But though he was able to buy some bones, the tail, and a piece of hide, no price would induce the hunters to bring him the head. The tail is a great medicine for headache and vertigo; the ailments are cured by tying it around the head of a sick person. It is worth about twelve shillings up country and more in big towns.

To kill the roan antelope is dreadful bad luck. The writer's guide—El Hadji—killed one once after four shots, “so strong him juju against powder.” Within a month two of his slaves died. A friend of his—an Ibi hunter—shot one once, and for three months afterwards was unable to shoot straight. So he went to a medicine-man, who for ten shillings' worth of cloth gave him medicine to wash himself in, which killed the *juju*. Another young hunter wounded a roan antelope at night; he went home and told his father—an experienced veteran—who said, “You are not fit to kill a roan.” The young man next morning followed the blood trail to the foot of a tree, where he found a woman squatting on the ground. He ran home frightened to his father, who gave him medicine against roan antelope *juju*, and then returned to the tree. The woman was still there, so he took up a stick and beat her, saying, “You are the bad *juju* of a roan antelope”; the woman vanished, and a roan lay dead before him.

The waterbuck have much the same *juju* as the roan antelopes, but weaker, so that hunters can kill them by wearing certain charms. The duiker has very bad *juju*; by night he carries a bright light between his horns. The cob antelope has only a feeble *juju* which can be warded off by charms.

If a man shoots a koodoo and goes up to the body, he will die. The thing to do after killing the koodoo is to go to the nearest village, and in course of conversation say you saw vultures hovering over such and such a place—“there must be a dead beast there.” Some of those who hear this will innocently go there; the wily hunter then follows, and taking care not to be the first to find the body, gets a share of the meat, the *juju* of which is powerless, as it does not know who slew it.

West Africa; Yorubas.

Stone.

In Afric's Forest and Jungle; or, Six Years among the Yorubas. By Rev. R. H. Stone. Edinburgh: Oliphant, Anderson and Ferrier, 1900. 8vo. pp. 274. Price 3s. 6d. Presented by the Publishers.

32

This is an interesting account of the experiences of a missionary in Western Africa. The author seems to have little taste for pure ethnological inquiries, but his photographs of the native races have some value. Anyone who has read Colonel Ellis's classical account of the beliefs of this people is not likely to add much to his knowledge by reading this book. But it is written in a simple, unpretending style and gives a graphic account of the rather ghastly experiences of a missionary among a singularly brutal race.

W. CROOKE.

Alphabet.**Clodd.**

33 *The Story of the Alphabet.* By Edward Clodd. London: Newnes, 1900. Sm. 8vo. 234 pp. Price 1s. Presented by the Publisher.

This book appears at an unfortunate time. Had most of it been written fifteen years ago it would have been greeted as a final summary of the certainties of the subject. Were it to be written fifteen years hence there would probably be much changed of those supposed certainties. Had it even been written a year later, the great Cretan discoveries of early writing would have given a different complexion to it. This great and rapid change in our knowledge is the hardship, and nowise the fault, of the author; and if the publisher demands for his shilling library to have the alphabet among some two dozen subjects, well, some one must do it to date, and let us be glad that it is Mr. Clodd who has ventured. But no one would choose the present time to make a pronouncement on so confused a subject.

The divisions of this volume briefly are, the mnemonics for ideas (such as American writing), the Chinese, the cuneiform, the hieroglyphic, the derivation of the Phœnician, the Cretan, etc., Greek and derivatives, and a mention of runes and ogams. The development of the principle of writing is carefully traced through the stages of mere impulses to memory (such as tying a knot in a handkerchief), the pictorial marks which suggest the subject, the ideographic, in which each sign has a constant meaning, and the phonetic, in which the sign may be used for a sound disconnected from its original meaning. A very practical summary is given of the main systems of ancient writing; but we can now say definitely that the Egyptians in the first dynasty were in the ideographic stage, with scarcely a trace of the phonetic.

On the Phœnician alphabet, De Rougé's theory of its derivation from the Egyptian hieratic is presented in some twenty pages, without a qualm until the last paragraph is reached, where the reader is warned that it may be all wrong. Looking at the table on p. 143 showing the comparison of the forms, carefully selected to agree as well as may be, the resemblances between the hieratic and the Phœnician are, however, far from strong. In the 22 letters 9 have scarcely any resemblance, 7 are doubtful, 4 are fairly alike, and only 2 can be claimed as really clear. This is far from satisfactory, and it is strange that so inconclusive a theory should have been so largely accepted. Now that we know how all these letters, and the larger stock kept up in Karia and Spain, were used continuously from 5000 B.C. or earlier, the Phœnician connection has sunk to its own place as merely a late assortment of material which was well known long before.

We are yet learning, and have much to learn, about the sources of the European alphabet; but for the present this little book will familiarise the questions to many who would not otherwise have heard of them.

W. M. F. P.

Progress of Invention.**Iles.**

34 *Flame, Electricity, and the Camera: Man's progress from the First Kindling of Fire to the Wireless Telegraph and the Photography of Colour.* By George Iles. 8vo. pp. 398: illustrated. New York. Doubleday and McClure Co., 1900. (Presented by the Author.)

The title of Mr. Iles' book sufficiently explains its character. It is an attempt to indicate in a popular style the way in which one stage of human invention leads to another. It contains, among many other topics, a summary of methods of fire production, a note on the use of composite photography to determine racial types, and some examples of photographic colour printing which are much in advance of what appears to satisfy us in this country.

J. L. M.

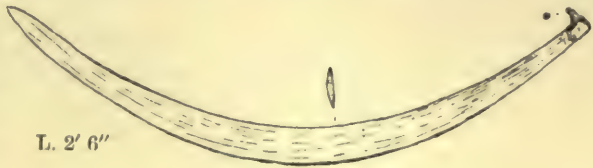
AUSTRALASIA.

North Queensland.

Edge-Partington.

Note on a Wommera from North Queensland. Communicated by J. Edge-Partington. **35**

When in North Queensland in 1897, I purchased from a dealer in Cairns an unusual form of wommera, either made in imitation of a boomerang or out of an old one. Among my photographs of Queensland natives I have one in which this form of wommera appears in the hands of a native inhabiting the scrub district between Townsville and Cooktown. It is of a wood similar to that from which the large swords from this district are made. The peg is of wood, circular in section, and is kept in position with "black boy" gum.



Tasmania.

Moir.

On the Stone Implements of the Natives of Tasmania. Communicated by J. Paxton Moir to the Anthropological Section of the British Association for the Advancement of Science. Bradford, September 5th, 1900. **36**

The author describes recent excavation in former camping grounds and other places of native resort, which yielded, at a depth of a few feet, hand axes, knives, and other implements of chipped, unground stone; and also large numbers of concave scrapers and groovers, which were no doubt used for shaping spears and for grooving club handles for the grip. The paper will be found, in full, in vol. xxx of this *Journal*.

Tasmania.

Tylor.

On the Stone Age in Tasmania, as related to the History of Civilisation. Communicated by Professor E. B. Tylor, F.R.S., to the Anthropological Section of the British Association for the Advancement of Science, Sept. 5th, 1900. **37**

The author considered the results to be arrived at upon the Tasmanian stone implement problem in its present condition. It now becomes clear that the natives of Tasmania illustrate the culture of the Stone Age at a period of development even below that of the Palæolithic Man of the Mammoth Period in Europe. It thus becomes important to put compactly the elements of Tasmanian life, as involving a claim to be considered as the condition coeval with the lowest available record. How the Tasmanians with their house and boat building, fire-making and cooking, basketry and leather work, rude tools and weapons, combined with a mythology which with its star myths and doctrine of nature-spirits, and an animistic religion culminating in polytheism, present a picture of man's life on the earth, which though far from primitive is perhaps the earliest which is based on direct anthropological evidence.

In the course of the discussion which followed this communication, Mr. H. Ling Roth said that some eighteen months ago he had received from a Yorkshire gentleman, Mr. J. Backhouse Walker, an account given by an old Australian settler, who in his youth had come across a group of black fellows whilst they were actually engaged in making these stones. The first process was simply to split them by hurling them violently on the rocky ground, and some stones were at once used in this rough

shape for cutting up kangaroo meat, whilst other stones were prepared by chipping. At one period, doubtless the Tasmanians covered the whole of Australia; and they were subsequently almost swept away—only scattered representatives being left in small areas—by another race.

Tasmania.

Fysh.

38 *Tasmania: Primitive, Present, and Future.* By Sir Philip Fysh, K.C.M.G., Agent-General for Tasmania. From the *Journal of the Royal Colonial Institute*, XXXI, 75-102.

This is a paper read before the Royal Colonial Institute, on January 16th, 1900. It contains (pp. 76-80) a full and accurate account of the early history of European enterprise in Tasmania and of the disappearance of the aborigines. J. L. M.

New Zealand.

Schurtz.

39 *Schnitzereien der Maori aus dem Städtischen Museum in Bremen.* Von H. Schurtz. (*Globus* LXXVII, pp. 53-8.) With fourteen photographic illustrations. Presented by the Author.

This is an interesting article on the subject of Maori ornament, based principally upon a series of modern carvings executed to order by *Te Tuhi*, one of the last of the Maori carvers in wood. The series forms a complete set of beams and rafters for a typical Maori house, which is by this time erected in Bremen, presumably on the premises of the City Museum. Mr. Schurtz begins by noticing that the designs employed in painting flat surfaces are different in character from those which occur in carved work. They consist of a motive rather suggesting an anchor, and occur upon the early tattooed heads, suggesting that the change to the well-known scroll designs was first made in the case of tattooed heads, and then in the carved wooden figures representing human beings thus tattooed. Representations of human beings not being painted but always carved, the art of the painter would not be affected by the change, and thus the older style was preserved in painting, when it had already disappeared in sculpture. This theory, though ingenious, is not we think supported by facts, as the anchor-pattern undoubtedly occurs on carvings of some antiquity. A description of the component parts of a Maori house is then given, with the native names, and is followed by the interpretation of the various figures given by the carver, *Te Tuhi*.

The author expresses the hope, which will be shared by all interested in the early history of New Zealand, that the continuation of Mr. Hamilton's valuable work on Maori art will include an enumeration of the different Maori designs with their exact native names. O. M. D.

New Zealand: Pataka.

Edge-Partington.

40 *Note on a Pataka in the Auckland Museum, New Zealand, together with a further Note on a Carved Canoe-Head in the British Museum.* Communicated by J. Edge-Partington. (Plate E, fig. b.)

In my note on a carved canoe-head from New Zealand, which appeared in the last number of the *Journal* of this Institute, p. 305, I gave "snake" as an equivalent of the word "manaia." This was an unfortunate word to have chosen, as there are no snakes in New Zealand. A *manaia* is a mythical monster, corresponding to the serpent of the Garden of Eden. In the Auckland (N.Z.) Museum there is a fine pataka or village store-house, ornamented with the very oldest style of carving (except where restored at a later period), the side slabs of which are carved to repre-

sent the ancient Maori legend of the temptation of woman by the *manaia*. The slabs are carved from end to end with a row of male and female figures; between each is a *manaia* with its head turned towards the figures. The male figures are represented as turning away from the monster, while the female figures are turned towards the monster as if in the act of listening. The centre figure is composite, facing outwards, with a *manaia* on either side. In the carving of this monster on the canoe-head the snake-like neck is evidently drawn out to fit the required space.

New Zealand: Maori Scroll Pattern.

Edge-Partington.

On the Genesis of the Maori Scroll-Pattern. Communicated by J. Edge-Partington. (Plate E, fig. a.)

41

In sending me a photograph of a very ancient slab from a Pataka or store-house in the Auckland Museum, Mr. Josiah Martin suggests that this particular way of depicting the *manaia* is the genesis of the Maori Scroll. Mr. Hamilton also in his *Maori Art*, p. 158, speaks of these large spirals or scrolls as *manaias*. So many suggestions have been made as to the origin of this particular pattern, such as the new fern fronds, the markings on shells, etc., that it is interesting to find yet another and one more likely to be correct. It is only by the study of these very early pieces of the carver's handiwork that we can hope to find a true solution.

New Zealand: cf. J.A.I. XXIX (N.S. II), 304-6.

Edge-Partington.

The Editor of the *Journal* regrets that by an unaccountable mistake the notes entitled "*New Zealand Kotahas or Whip Slings*," "*Carved Canoe-Head from New Zealand*," and "*On a Stone Battle-Axe from New Zealand*," printed in vol. xxix (N.S. II) pp. 304-6, went to press uncorrected by the author; and also that the second of them was wrongly ascribed to Mr. C. H. Read. In reality, both articles were contributed by Mr. Edge-Partington, who sends the following list of corrections:—

42

Page 304, line 23, for it	read these.
„ „ „ 34, „ charged	„ charred.
„ 305, „ 40, „ at present in my possession	„ in the British Museum.
„ „ „ 41, „ C. H. Read	„ J. Edge-Partington.
„ „ „ 46, „ Aiyai in her	„ Angas in his.
„ 306, „ 10, omit the words at present . . .	resting-place.

Timor Group: Travels.

Ten Kate.

Verslag eener reis in de Timor-groep en Polynesië. Door Dr. Hermann F. C. ten Kate. Leiden: E. J. Brill. 1894. pp. 310. Presented by the Maatschappij ter bevordering van het Natuurkundig Onderzoek der Nederlandsche Koloniën.

43

This book, which is a record of travels in the Timor group in 1890, does not call for any special notice in these pages. It does not profess to give the scientific results of the expedition (cf. *Int. Archiv. Ethnog.*, vii, viii), which are merely sketched in a few pages at the end of the book; there are, however, twelve plates dealing with the huts, megalithic monuments, weapons, etc.

If the contents call for little notice here, the same does not apply to the style in which the book is got up. We are unfortunately too familiar with the unbound books which fall to pieces as soon as one has read one chapter. In this case there is the added misery of lack of index and table of contents. It should be made a penal offence for publishers to issue a book of this description. If a book is worth

writing and worth publishing, it is worth an index, otherwise the facts recorded are virtually lost, unless each reader makes his own index or analysis. It is certainly unworthy of a scientific society to issue such a book. N. W. T.

New Guinea.

Biró.

44 *Beschreibender Catalog der Ethnographischen Sammlung Ludwig Biró's aus Deutsch-New-Guinea (Berlinhafen).* Published by the Hungarian National Museum, Budapest, 1899. 4to. With plates. Presented by the Author.

The authorities of the Hungarian National Museum at Budapest have made an excellent start in the series of descriptive catalogues of the ethnographical collections under their charge, and, if all subsequent publications of the series come up to the level of the first issue, a work of great importance and utility will have been offered to ethnologists, and one which should prove of much assistance in the proper classification of material in museums and private collections. The first instalment deals with the fine ethnographical collection made by Herr Ludwig Biró in German New Guinea (Berlinhafen), a collection which has evidently been made with considerable care, both in the selection of specimens and in the recording of detailed information regarding their use, varieties, their native names in different localities, and so forth. The text is bilingual, being printed in Hungarian and German in parallel columns, a useful feature, considering how few of those interested in the subject are acquainted with the former language. The illustrations are numerous and good, and, even in the absence of a regular index, it is easy to find a reference to any particular object or class of objects, as the text is conveniently divided into sections and sub-sections under appropriate headings. The clothing and personal ornaments are described in detail, and in some instances a very full account is given, with illustrations, of the process of their manufacture, as, for instance, in the case of the making of shell armlets by means of the cylindrical drill of bamboo, which is weighted with a stone, and is rotated upon the block of *tridacna* shell until a central core is cut right out, the end of the bamboo being kept from slipping by means of an ingenious binding of creeper wound round the shell-block, while the friction is augmented with moistened sand-grit. This interesting progress has been described both by von Luschan and Parkinson, but fresh details are given here.

Domestic utensils and tools are treated of in similar detail, and following these are sections devoted to religion, magic, dance, etc.

Lastly, the various forms of weapons—cassowary-bone daggers, bows and arrows, lances, and fish-spears—are described minutely, and particular attention is paid to the ornamentation upon the different portions of arrows, which is carefully studied and analysed, so as to demonstrate the different *motifs*, their derivatives, combinations, and so forth, in a classification by morphological affinities.

References to literature are given freely. A small map of the region specially dealt with would have been a useful addition, and would have added to the value of the publication, which may be accepted as a very serviceable treatise upon the ethnography of the Berlinhafen district, as illustrated by the collection made by a careful and painstaking observer. Such non-portable objects of use as dwellings, canoes and others, whose size was such as to prevent their being collected and sent to the museum, are not dealt with, but it is to be hoped that these may also receive attention, and be described in a detailed manner, in the same way as the objects actually forming the collection itself.

HENRY BALFOUR.

Solomon Islands.**Edge-Partington.**

Note on an Object of Unknown Use from the Solomon Islands. Communicated
by J. Edge-Partington. (Plate E.)

45

The subject of this note was recently presented to the British Museum by Rear-Admiral Hand, who obtained it from one of the Solomon Islands when on a cruise in the South Pacific. Unfortunately he cannot give any more definite information than this. I have communicated with the Rev. Alfred Penny, the author of *Ten Years in Melanesia*. He thinks that it was probably made at San Cristoval or Malayta, as he has seen clubs of similar shape at both islands, though never one with so beautiful a pattern. In his opinion it is a dancing club, and the perforation on the upper edge is for attaching bundles of feathers, shells, or dried beans to chink like castanets. I cannot, however, bring myself to believe that this was the use to which it was put. I am rather inclined to think that he is confusing it with the glaive-like dancing club common to that part of the group (*Album*, 227, No. 1). In the first place there is no natural grip, nor does the narrow portion below the butt end show any signs of wear; the edges, too, are squared and sharp. The whole is of uniform thickness, about $\frac{1}{8}$ th of an inch. The engraving on either side is almost identical, and similar to that on a dancing club in the form of an axe which was labelled Treasury Island, Bougainville Straits (*Album*, 2nd series, Plate 125, No. 1), but which Mr. Parkinson thinks is more likely to come from Būka.

The representation of a human head is also suggestive of this same locality.

It will be noticed in the illustration that the carving of the lines of the face are continued down the shaft terminating in spirals. In the Godeffroy Catalogue, Plate VI, No. 3, is a similar carving on a club from Būka. In the British Museum, again, is a club with a similar design (*Album*, Plate 250, No. 1), which, although at one time supposed to come from New Britain, is now attributed to the Solomons. In the museum at Milan are somewhat similar clubs labelled New Georgia.

The perforation on the upper edge is in my opinion too large for merely attaching bunches of feathers, etc. That a band passed round the "implement," and was kept in position by the two projecting horns, is evident from the surface of the wood being highly polished by friction at this point, the only place on the whole of the surface where there is any sign of wear. The object was meant to be suspended, but for what purpose it is difficult to say.

Since the above went to press, both Dr. Codrington and Mr. Alfred Penny have seen the subject of this note, and pronounce it to be a *Tindalo* emblem, or object of veneration representing a deceased ancestor.

J. E.-P.

Rotuma: Physical Anthropology.**Gardiner: Duckworth.**

On Crania collected by Mr. J. Stanley Gardiner in his Expedition to Rotuma. Communicated by W. L. H. Duckworth, M.A., Lecturer on Anthropology in

46

the University of Cambridge, to the Anthropological Section of the British Association for the Advancement of Science. Bradford, September 11th, 1900.

The subject of this communication is a collection of nine crania from the above-mentioned locality. The results of a craniological investigation show that while considerable individual differences exist, there are at least two types of skull to be met with in the island of Rotuma. The types are, firstly, a variety of the form of cranium usually found among Polynesian natives, though possessing certain characteristics which may almost be described as Mongolian; and, in the second place, the type of cranium characteristic of Melanesians occurs in Mr. Gardiner's collection.

That such different types should be met with in one small island is in accordance with what would be expected on *a priori* grounds, when it is considered that Rotuma is situated at the centre of contact of three important ethnical areas, viz., the Polynesian to the east, the Melanesian to the south-west, and the Micronesian (where Mongolian elements are discernible among the natives) to the north-west.

Hawaii ? : Featherwork.

Edge-Partington.

47 Note on some Feather-Mats in the British Museum. Contributed by J. Edge-Partington. (Plates F, G.)

Professor Brigham in his *Hawaiian Featherwork* refers to, and figures, (Plate VI), two feather mats in the British Museum, which together with a coronet of similar manufacture form the subject of this note.

Professor Brigham first saw these when on a visit to this country, he then considered that they were not Hawaiian; but since, failing to find any more likely locality, he places them as "mats on which offerings were made to the God Kukailimoku," until a better use can be found for them.

If these were merely mats I fail to see the use of the tying cords fastened to each end; why, too, should the makers have departed from their usual custom of mounting feathers on a network of Olona fibre, a much more suitable foundation than the thick rows of fibre of which these mats are made, wrapped and sewn together; a form of manufacture, moreover, which is not in vogue in Hawaii. Professor Brigham says that the patterns are quite unlike those used in the feather cloaks, but I think one can go further than that, and say that they are unlike any known patterns from Hawaii. We must therefore try and find another home for them, and I would suggest Tahiti, and that their use was a protection when fighting. My reason for this attribution is that there are in the British Museum long, oblong boxes formerly supposed to come from Hawaii; by an inscription, only partly legible, on one of them in George Bennet's handwriting, we now know that these boxes are Tahitian. The inscription is as follows:—"A native . . . box made of the wood of the breadfruit tree . . . containing the war-like ornaments . . . Haulia, presented by him to G. Bennet, 1822, and which he says were worn by . . . also and preceding kings of Huahine." This particular box (Plate G, Fig. 2) was received, with other Eastern Pacific specimens, from the Sheffield Literary and Philosophical Society; the specimens originally in the Museum are without history, as are also the feather ornaments now under discussion. It may well be therefore that they were received at the same time, and possibly formed a portion of one of the early collections either of Captain Cook or Sir Joseph Banks.

As against this theory Williams in his *Missionary Enterprises*, p. 498, says that "at Tahiti and Hervey Islands there are but few varieties of the feathered tribes; and these are not remarkable either for the beauty of their plumage or for the sweetness of their notes"; if therefore the mats and coronet were manufactured in the Tahitian group, they must have been from imported feathers.

Failing Tahiti there is the Island of Rurutu, in the Austral group, "the people of which are distinguished, above all others in these seas, for their taste and skill in finery of every kind, from the feathered helmets of their warriors to the carving on their canoes. . . . In manners, dress, and language, they very nearly resemble the inhabitants of Tahiti and Huahine" (*Tyerman and Bennet's Voyages*, 1831, Vol. I, p. 496).

The only reason for placing these objects in the Hawaiian section, until some

definite locality is obtained, is that the feathers used are evidently from the same birds as those from which the Hawaiians gathered their stores.

It is to be hoped that some of our readers may be able to throw further light on the subject.

Gambier Islands: Languages.

Tregear.

Mangareva Dictionary, Gambier Islands. By Edward Tregear. New Zealand, Wellington, 1899, pp. 121. Presented by the Author. **48**

This is a very useful collection of words representing the language of the Gambier Islands in the southern portion of the Panmotu Archipelago, and almost on confines of Polynesia, Easter Island being the only important island lying further east. The language is purely Polynesian and differs in many respects from the Panmotu of the same region, of which language the same author has already published a similar dictionary. (Wellington, N.Z., 1895.)¹ The islands form a part of the French possessions in the Pacific, and the missions are those of the Roman Church; hence the language, unlike that of the other important groups, is not represented by any Bible translations. This fact adds greatly to the value of such a list as that which Mr. Tregear now publishes. The principal example of the Mangarevan language which previously existed is that contained in Hale's *Philology of the United States Exploring Expedition*, published at Philadelphia in 1846. Hale's material for the language consisted of a few mission translations and a vocabulary by M. Maigret, a former missionary. M. l'Abbé Mosblech had published in 1843 a *Vocabulaire Océanien*, the title page of which stated that it referred to the languages of the Sandwich, Marquisian and Gambier Islands, but the work itself contained no specimens of the language used in the latter group. The Rev. S. J. Whitmee in 1874 contemplated the publication of a Comparative Dictionary of the Polynesian Languages, and in a paper read in that year before the Philological Society, he stated that M. Pinard was then contributing material in the Gambier Island language. No more than specimen pages were ever published of Rev. S. J. Whitmee's dictionary, and these contained no specimens of the Gambier language. The Rev. S. Ella's paper in the *Journal* of this Institute (vol. xxix (N.S. ii) p. 154), contains a Mangarevan list of which I have not been able to trace the origin, but it agrees literally with that of Mr. Tregear.

The author states in the introduction that the language is nearly identical with the Maori, but it is much more closely akin to the Rarotongan than to Maori, and differs from the latter in several details. Both Mangarevan and Rarotongan have no sounds representing the *s* or *f* of Samoan, whilst the Maori represents those sounds by *h* and *wh* respectively. In Hale's vocabulary of Mangarevan *h* was not used, but Mr. Tregear uses it sometimes for the *wh* of Maori and *f* of Samoa, the same words being often used with or without the *h*, e.g., *hahae*, *aae*, to tear; *hara*, *ara*, pandanus, etc. The origin of the Mangarevan people from Rarotonga was inferred by Hale from a native genealogy given to him by M. Maigret, which indicated that they came from Rarotonga about four generations after the settlement of the latter island. Hale noted that "the only points of any importance in which the dialect differs from the Rarotongan are, first, in the use of *ranga*, instead of *anga*, to form the participial noun, as *te ope ranga*, for *te ope anga*, the act of finishing; and secondly, in the use of *man* as a plural prefix. In both these points it resembles the Tahitian. Now if the Rarotongan emigrants who settled in Mangareva came, as is most probable, from that side of Rarotonga which faces towards the latter group (*i.e.*, the eastern

¹ Cf. *Journ. Anthropol. Inst.*, xxvi, 1897, p. 204.

side), they were of the Ngati-Tangia, or Tahitian party, and may, at that time have preserved some peculiarities of their original tongue which were afterwards lost in Rarotonga, on a more complete intermixture with the Ngati-Karika, or Samoan party." (*United States Exploring Expedition*. Vol. vi, Ethnography and Philology, by Horatio Hale, p. 140.)

The author has not indicated the origin of his work, but it is presumably derived from the French-Mangarevan lists mentioned in the preface to his Maori-Polynesian Dictionary as derived from Mons. l'Evêque d'Axieri. A few important words have been omitted, e.g. *maua*, the exclusive pronoun of first person dual. An English-Mangarevan index would have been useful, as there are no native texts to elucidate, and it is the equivalent of English words which will be most frequently required.

SIDNEY H. RAY.

New Hebrides.

Edge-Partington.

49 *Note on a Shell Adze from Ambrym Island, New Hebrides.* Communicated by J. Edge-Partington. With Plate H.

A very unusual form of shell adze has been presented to the British Museum by Captain Leah, R.N. Its elaborate nature and double blade seem to indicate that it was for ceremonial use only. The donor obtained it on Ambrym Island; last year the Museum purchased a collection which contained several objects from this island labelled "for use in the pig-killing ceremonies." These I figured (*Album*, 3rd series, Plate 63, No. 1) along with an adze with a terebra-shell blade made out of an old pig-killing club. It is probable therefore that the subject of this note was used on these occasions; it is quite certain that to use it as a tool would be impossible, nor do the edges of the blades show any signs of wear; the deepness of the carving would also weaken it considerably. The handle is in two pieces lashed together with sinnet, and the whole is covered with an incrustation of smoke.

J. EDGE-PARTINGTON.

Pacific Languages.

Schmidt.

50 *The Inter-relation of Melanesian, Papuan and Polynesian Languages:—*

1. *Über das Verhältniss der melanesischen Sprachen zu den polynesischen und untereinander.* Von P. W. Schmidt, S.V.D. [*Sitzungsbericht d. Kais. Akad. d. Wissenschaften in Wien. phil. hist. Classe.* Bd. CXXI.] Wien. 1899. 8vo. 93 pp.

2. *Die sprachlichen Verhältnisse Oceanien (Melanesien, Mikronesien, und Indonesien) in ihrer Bedeutung für die Ethnologie.* Von P. W. Schmidt, S.V.D. [*Mittheilungen d. Anthropol. Gesellschaft in Wien.* Bd. XXIX, 1899.] 4to. pp. 245-258.

The first of these well-considered treatises consists of a general discussion of the Melanesian and Papuan languages, followed by particular illustrations of the agreement between the Melanesian and Polynesian in grammar and vocabulary. In the second paper the conclusions of the first are discussed in their relation to the ethnology of the tribes of the Oceanic region. It will be convenient here to notice the first paper in some detail, with occasional reference to the latter. The author's material for his comparisons is mainly that contained in the Rev. Dr. Codrington's book on *The Melanesian Languages*,¹ and the present writer's *Comparative Vocabulary of the Dialects of British New Guinea*,² and paper on "New Guinea Languages" in the *Journal of this Institute*.³

¹ Codrington, Rev. R. H., *The Melanesian Languages*. Oxford, 1885.

² Ray, S. H., *Comparative Vocabulary of the Dialects of British New Guinea*. London, 1895.

³ Ray, S. H., "The Languages of British New Guinea," *Journ. Anthropol. Inst.*, August, 1894, pp. 15-39.

In the introduction to Professor Schmidt's paper, he sets in opposition the statements of the late Professor Friedrich Müller, of Vienna, and Rev. Dr. Codrington as to a residuum in the Melanesian speech which is non-Malay and non-Polynesian. Müller seemed to recognise this "residuum" (which he called Papuan), in some of the languages known to him when he published his great work on the *Grundriss der Sprachwissenschaft*,¹ but Codrington was inclined to think that the vocabularies did not disclose any ancient stratum of words in the Melanesian tongues, and that the comparison of grammar did not show any greater difference than was consistent with a community of origin. In his work, Müller set forth the languages of Nengone and Mefur as examples of Papuan tongues, and in his second section, Schmidt proceeds to prove and clearly shows that the Nengone is Melanesian as to its pronoun stems, its indication of number in the pronoun, in the expression of possession, and in enumeration. The relationship of the Mefur to Malay and Polynesian is regarded by Professor Schmidt as proved by Dr. Kern in his work on that language.²

In connection with this subject, it must be remembered that when Müller, Codrington, and Kern wrote, the existence of any distinct Papuan languages was not proved. There was no indication that in the Oceanic language region, outside Australia, any languages existed which could not be affiliated to the ordinary Malay, Polynesian or Melanesian groups in grammar, or which were totally distinct in vocabulary. Müller's assumption that Mefur and Nengone were Papuan languages, though erroneous, was to some extent warranted by indications of a strange element in their vocabularies, and it is even now by no means certain that they should be classed as purely Melanesian languages, in the same way as the typical languages of, for example, the Banks Islands, Northern New Hebrides, and Southern Solomons. Codrington expresses a difficulty in dealing with the languages of Savo in the Solomons, and of Santa Cruz, which place these in the same category as the Nengone and Mefur, as not falling in line with the general Melanesian form of speech. At the present time, however, the existence of undoubtedly non-Melanesian languages in the island of New Guinea is an ascertained fact, and the study of these may be expected to throw considerable light upon the question whether there ever was in the islands of Melanesia and Polynesia, pre-Melanesian languages of a similar character to the non-Melanesian languages now found in New Guinea. The structures of some other languages spoken in the extreme north and south of the Geographical Melanesia are also better known, and help towards a solution of the problem.

It may be permitted to the present writer, speaking with some knowledge of the peculiarities of the non-Melanesian languages of New Guinea, to state that whilst there seems to be little or no evidence of any survival in the modern Melanesian languages of ancient grammatical forms, there may be possible survivals of words to a greater or lesser extent. In all the non-Melanesian languages of New Guinea, the grammar is much more complex than in the typical Melanesian, and it would be a natural sequence that if there were pre-Melanesian languages of the same character as these, contact with a simpler language would result in the breakdown of the complex and use of the simpler grammar. Words, however, would survive, probably as names of things and actions for which the newer speech had no exact equivalents. It is noteworthy that if in any of the exceptional Melanesian languages a list be made of words which do not apparently belong to the common Melanesian stock, this list does not in any way agree with a similar one taken from other exceptional languages.

¹ Müller, Friedrich, *Grundriss der Sprachwissenschaft*. Wien, 1876.

² Kern, H., *Over de verhouding van het Maforsch tot de Maleisch-Polynesische talen*. Leiden, 1884.

Now diversity of vocabulary is also one of the characteristics of the non-Melanesian languages of New Guinea. There is no Papuan family of languages as there is a Melanesian or Polynesian family with related words and cognate grammar. There is no single Papuan *Ur-Sprache*. Hence, if there were Pre-Melanesian languages in the present Melanesian region, and those of similar character to the modern Papuan, any survivals of vocabulary should not be expected to show agreement between one language and another, or with the Papuan languages of New Guinea, whilst fragmentary survivals of grammar will only tend to give a peculiar character to those Melanesian languages in which they have been adopted. This subject deserves a fuller discussion than is permissible in the present review, and it would be well to wait for the publication of more material before any conclusion is adopted. Speaking with regard to unpublished material in his own possession, the present writer is of opinion that traces *may* be found of pre-existent languages in the Melanesian region.

In his third section, Professor Schmidt treats of the possessive suffixes in the Polynesian, Malayan and Melanesian languages. The substantial identity of these was pointed out by the present writer in a paper written in 1896,¹ which seems to have escaped Professor Schmidt's notice. The existence of these suffixes in Polynesian, though denied by Müller, admits of no dispute, and as was shown in the paper on the "Common Origin," forms a strong argument for the common origin of the Polynesian, Melanesian and Malayan languages. Professor Schmidt discusses the relationship of the suffixes *ku*, *mu* and *na*, to the personal pronouns of the three languages. He, however, regards the *a* or *o* to which the suffixes are added in Polynesian as genitive particles, whereas they are really nouns, as may be seen by comparison with the other languages.

The next section on the position of the Melanesian language with regard to the Polynesian, was also to some extent anticipated in the present writer's paper on the "Common Origin." As in that paper, Professor Schmidt points out that the difference in the use of the possessive words and the transitive suffixes are evidence that the Melanesian is an older form of speech, though he has not shown the substantial identity of the so-called Polynesian passive terminations with the Melanesian transitives. He brings forward, however, an additional argument based on the change of the original trial or quadral number of the pronoun into a simple plural.

Professor Schmidt next discusses the origin of the Polynesian languages. He comes to the conclusion that they are most closely connected with those of the Southern Solomon Islands (Florida, Bugotu of Ysabel Island, and Vaturanga of Guadalcanar Island), and that with them they form the latest group of the Melanesian languages. The agreement is shown to consist as follows:—1. Nearness in phonology; (frequency of vowels; disappearance of *q* = *kpw*, *gbw*, and the nasal *m*; appearance of *f*); 2. Greater community of words; 3. Greater likeness of the personal pronouns; 4. Use of the trial for the plural; 5. Identity of the personal article; 6. Absence of the so-called independent form of the noun; 7. Likeness of the genitive construction; 8. Identity of the local particle; 9. Likeness of the verbal particle of present-aorist; 10. Greater likeness of the reciprocal verbal particles; 11. Existence of the decimal system of numerals, and identity of the words for 6–10 and for 100.

The Melanesian languages of British New Guinea are regarded as coming between the New Hebrides and Solomon Island groups, the tribes speaking them arriving first in the Louisiade Archipelago and then spreading along the New Guinea coast as far as Cape Possession. An older stratum of Melanesian languages (*i.e.*,

¹ Ray, S. H., "The Common Origin of the Oceanic Languages," *Jour. Polynesian Society*, v, 1896, pp. 58–68, and also *Hellas, Revue Polyglotte Internationale*, 6^{me} année, 1896.

those for which the present writer suggested the provisional name of Melano-Papuan) had previously occupied the Louisiades, and the languages of South Cape, Sariha, East Cape, and others in that neighbourhood, remained in contact with this older stratum and so developed more slowly than the related languages further West (Motu, Maiva, Mekeo, etc.), these latter developed further in the same direction as the Polynesian with regard to changes of phonology and expulsion of consonants.

The supplement to Professor Schmidt's first paper deals briefly, and his second paper more fully, with the anthropological relations of the Melanesians and Polynesians. He refers to, and quotes Guppy's book on the Solomon Islands,¹ and Codrington on the Melanesians,² in order to show that there is an approximation of the Southern Solomon Islanders to the Polynesians. The points illustrated in which these agree, and so differ from the general Melanesian, are stated as follows: --1. Bodily structure (lighter colour, greater height, variation in cephalic index); 2. Hair (less frizzly, and growing in larger spirals); 3. Tattooing and personal adornment (more attended to); 4. Houses and boats (more elegant and ornamented); 5. Sociology (absence of exogamous divisions, existence of father-right); 6. Religious conceptions, sacrifices and tabu; 7. Less use of the bow and arrow.

Some other points of great interest are touched upon in the second paper. The oldest Melanesian languages are indicated as those of the extreme southern and northern regions, New Caledonia and the Loyalty Islands, and the north-east coast of German New Guinea. Professor Schmidt regards the absence in these languages of the trial form of the pronoun and the use of a vigesimal system of numeration, as marks of antiquity.³

With regard to the position of the Mikronesian languages, it is suggested that there may possibly be an approach by some of them to the Indonesian, though the lack of published material for a proper study of them is lamented. The present writer's unpublished material shows that these languages come between the Indonesian and Melanesian, and references to their connection with the latter will be found in his notes to Rev. E. T. Doane's paper on Ponape and Hawaii.⁴

The Indonesian languages are briefly passed over, as are also the questions of Negrito speech, and the relations of the island tongues to the Mon-Anam languages. In these directions there is still much work to be done.

Professor Schmidt suggests the adoption of the term Austronesian to describe the position of the whole of the languages including the Indonesian, Mikronesian, Melanesian, and Polynesian; the term Oceanic being abandoned because of its limited application in Germany as equivalent to Polynesian. There seems to be a certain amount of difficulty in adopting this term Austronesia, for the islands where these related languages are spoken, lie as much to the east of Asia as south, and there is, perhaps, more danger of confusion with the very different Australian by using a similar word, than there would be with the term Oceanic used in its English

¹ Guppy, H. B., *The Solomon Islands and their Natives*. London, 1887.

² Codrington, Rev. R. H., *The Melanesians—Studies in their Anthropology and Folklore*. Oxford, 1891.

³ In this connection it may be noted that the language of Tanna (referred to by Professor Schmidt as approaching the older languages) not only has a trial form of the pronoun, but also a quadral form, and the undoubtedly Polynesian language of Futuna in the New Hebrides, also has a quadral form. A form of the trial is also found in the Loyalty Islands, Language of Iai (Uvea Island).

⁴ Doane, Rev. E. T., "A Comparison of the Languages of Ponape and Hawaii," *Jour. Roy. Soc. New South Wales*, xxvi, p. 420-453.

sense. Probably the most exact descriptive term would be that used by Logan, who called the related languages stretching from the Indo-Chinese seas to the Eastern Pacific, by the inclusive name of Indo-Pacific.

In Professor Schmidt's paper, he speaks of the Melanesian languages of Torres Straits, when those of British New Guinea are meant. The real languages of Torres Straits are very different from the Melanesian, and the two regions should be clearly distinguished.

SIDNEY H. RAY.

NORTH AMERICA.

America : Nomenclature.

McGee.

51 *Amerind—a Designation for the Aboriginal Tribes of the American Hemisphere.* Communicated by Prof. W. J. McGee, President of the Anthropological Society of Washington.

A part of the proceedings of the Anthropological Society of Washington, at a meeting on May 23rd, 1899, seem destined to produce permanent influence on ethnologic nomenclature, this part of the proceedings taking the form of a symposium on the name of the native American tribes. The discussion was opened by Colonel F. F. Hilder, of the Bureau of American Ethnology, with a critical account of the origin of the misnomer "Indian," applied by Columbus to the American aborigines; he was followed by Major J. W. Powell, who advocated the substitution of the name *Amerind*, recently suggested in a conference with lexicographers. A communication by Dr. O. T. Mason followed, in which the various schemes of ethnologic classification and nomenclature were summarised and discussed. Contributions to the symposium were made also by Dr. Albert S. Gatschet, Dr. Thomas Wilson, and Miss Alice C. Fletcher. At the close of the discussion the contributions were summarised by President McGee as follows:—

1. There is no satisfactory denotive term in use to designate the native American tribes. Most biologists and many ethnologists employ the term "American"; but this term is inappropriate, in that it connotes, and is commonly used for, the present predominantly Caucasian population. The term "Indian" is used in popular speech and writing, and to a slight extent in ethnologic literature; but it is seriously objectionable in that it perpetuates an error, and for the further reason that it connotes, and so confuses, distinct peoples. Various descriptive or connotive terms are also in use, such as "North American savages," "Red Men," etc.; but these designations are often misleading, and never adapted to convenient employment in a denotive way.

2. In most cases the classifications on which current nomenclature are based, and many terms depending on them for definition, are obsolete; and the retention of the unsuitable nomenclature of the past tends to perpetuate misleading classifications.

3. While the name "Indian" is firmly fixed in American literature and speech, and must long retain its current meaning (at least as a synonym), the need of scientific students for a definite designation is such that any suitable term acceptable to ethnologists may be expected to come into use with considerable rapidity. In this, as in other respects, the body of working specialists form the court of last appeal; and it cannot be doubted that their decision will eventually be adopted by thinkers along other lines.

4. As the most active students of the native American tribes, it would seem to be incumbent on American ethnologists to propose a general designation for these tribes.

5. In view of these and other considerations, the name *Amerind* is commended to the consideration of American and foreign students of tribes and peoples. The term

is an arbitrary compound of the leading syllables of the frequently used phrase "American Indian"; it thus carries a connotive or associative element which will serve explicative and mnemonic function in early use, yet must tend to disappear as the name becomes denotive through habitual use.

6. The proposed term carries no implication of classific relation, raises no mooted question concerning the origin or distribution of races, and perpetuates no obsolete idea; so far as the facts and theories of ethnology are concerned, it is purely denotive.

7. The proposed term is sufficiently brief and euphonious for all practical purposes, not only in the English but in the prevailing languages of continental Europe; and it may readily be pluralised in these languages, in accordance with their respective rules, without losing its distinctive sematic character. Moreover, it lends itself readily to adjectival termination in two forms (a desideratum in widely used ethnologic terms, as experience has shown), viz., *Amerindian* and *Amerindic*, and is susceptible, also, of adverbial termination, while it can readily be used in the requisite actional form, *Amerindise*, or in relational forms, such as *post-Amerindian*, etc., the affixes being, of course, modifiable according to the rules of the different languages in which the term may be used.

8. The term is proposed as a designation for all of the aboriginal tribes of the American continent and adjacent islands, including the Eskimo.

The working ethnologists in the Anthropological Society of Washington were practically unanimous in approving the term for tentative adoption, and for commendation to fellow students in this and other countries.

The proposed designation is also approved by the officers of the Bureau of American Ethnology, as well as by the officers and members of the Anthropological Society of Washington.

America: Arts of Life.

Mason.

Aboriginal American Zoötechny. By Otis T. Mason. From the *American Anthropologist* (N.S.), I, 1899. 8vo. pp. 81. Presented by the Author.

52

"Zoötechny" includes "all industries associated with the animal kingdom," and the subject of this paper, therefore, "every phase of Indian life growing out of the connection between man and the beasts of the Western Hemisphere in pre-Columbian times." These have of course been greatly affected by manifold intrusions from the Eastern Hemisphere; but the author finds it possible to formulate eighteen Zoötechnic provinces, corresponding with the eighteen environmental areas of America suggested by Merrian in the Smithsonian Report for 1895.

Zoötechny may be conveniently divided into the following "chapters." I. Ethnozology, or the study of the fauna of each region in its relation with the human population, for "in one form or another the entire fauna of each region directly or indirectly enters into the life and thought of its people."

II. Exploitive Zoötechny, or the activities associated with the capture and domestication of animals (which Professor Mason classifies in elaborate detail).

III. Elaborative Zoötechny, embracing all the activities included in the disposal of animals after they are in hand, whether as food (raw or preserved), clothing or material for implements.

IV. The ultimate products of Zoötechny and their relation to human happiness, for every part of every animal that enters into savage industry is invoked to supply, not only the needs, but the artificial wants of the savage.

V. Social organisations and co-operations; for according to Professor Mason "Society was organised among the aborigines of America on the basis of the

animals. . . . Scarcely an industry relating to the treatment of animals was based on individual action. Men were fowling, fishing, and hunting together. Much of the apparatus could not be managed by any individual."

VI. The progress of knowledge in Zoötechny, including the growth of language. "It is astonishing to find what a large vocabulary exists," in each case, "for the different forms of animal life, and different parts of the animal's body." . . . "Half the words of any primitive language are derived from man's association with beast-kind." Moreover, "the inventive faculty, which after all is the differentiating element between man and the brute, has been stimulated in the devising of property, means of capture, and tools for handling animal substances."

VIII. Religion: because, "in lower forms of religion and mythology, zoötheistic conceptions are prominent. Every creature is somebody. The animal world lies very near to human actions. Detailed consideration of this heading is postponed, but Professor Mason illustrates his thesis by a table showing the comparative number of clans or *gentes*, and of "animal totems," among a number of native American tribes.

The paper is full of suggestive hints for the collection of material, and for the classification and arrangement of many kinds of ethnological specimens which accumulate at present in store-rooms and basements of museums.

The Plates which accompany it illustrate;—I, *Leisters*, combination structures for grasping, piercing, and retrieving, from Alaska, *U.S. Nat. Mus.*, 23,518, 29,864, 49,051; II. (a) Harpoon head for retrieving showing toggle and barb types in one, *U.S.N.M.*, 89,379; (b) Fishgig; shank, body and flakes of bone, *U.S.N.M.*, 30,379; (c) Fishhook from the Naskapi Indians of Labrador, *U.S.N.M.*, 89,977; (d) Throwing sticks and stunning darts from Xinger River, South America (after von den Steinen); (e) Bird-dart (for piercing and entangling), and throwing-board, of the Greenland Eskimo, *U.S.N.M.*, 168,974; (f) Modern *atlatl*, or throwing-stick, from Lake Patzenaro, Mexico, *U.S.N.M.*, 153,020; (g) Hide-scraper with blade of glass and grip of wood, from the Tebuelche Indians of Patagonia, *U.S.N.M.*, 178,403. III. Barbed harpoon (when the animal is struck the barb is detached, and the shaft is made to float vertically by the martingale and bladder), *U.S.N.M.*, 11,362. IV. Toggle harpoon and line from Cumberland Gulf, *U.S.N.M.*, 19,519 (detailed drawings of the essential parts). J. L. M.

Ontario: Religion.

Boyle.

53 *The Paganism of the Civilised Iroquois of Ontario.* Communicated by David Boyle, Curator of the Museum of Toronto, to the Anthropological Section of the British Association for the Advancement of Science. Bradford, September 10th, 1900. [To be printed in full in this *Journal*, vol. xxx.]

Notwithstanding the contact of the Iroquois or Six Nation Indians with white people for more than three hundred years, a very considerable number of the former have retained many of their old-time beliefs with the forms and ceremonies appertaining thereto.

Of four thousand Caniengas (Mohawks), Senecas, Cayugas, Onondagas, Oneidas, and Tuscaroras now residing in the Grand Reserve, within sixty miles of Toronto, Ontario, fully one-fourth continue to observe the ancient feasts or dances connected with the growth and ingathering of corn and fruits, and for desired changes in weather as well as for the cure of disease.

Some modification in the ceremonies was made about a century ago by an Onondaga named *Ska-ne-o-dy-o*, who announced himself as a prophet who had paid a visit to the abode of the Great Spirit. The changes introduced by him, however,

have not by any means removed the pagan character of the native beliefs, although he certainly did attempt to imitate some Christian observances. Still the addresses of the medicine men retain most of the old-time forms, although their significance in many cases is lost, and even the meaning of numerous words is no longer known.

The leading idea in the present form of worship is that of a Great Spirit; but this has been acquired from missionary sources, and although the Indians have adopted the idea of a heaven, they do not believe in any hell.

The quoted examples of petitions addressed to *Rawen Niyoh*, the Creator, illustrate the lack of assimilation of the old and new forms.

One of the most characteristic ceremonies connected with the Iroquois paganism is that of the sacrifice or burning of the White Dog at the New Year Feast during the February moon, when the spirit of the dog, accompanied by offerings of tobacco, conveys to *Niyoh* information respecting the condition of his "own people" on the Grand River Reserve.

North America: Tau-Shield.

Dalton.

Note on a Copper Shield from the N.W. Coast of America. Communicated by **54**
O. M. Dalton.

This shield, made of beaten copper, was originally obtained by the Hudson's Bay Company's Agents at Port Simpson from a member of the Stickeen Tribe: the crest painted on the front is that of the grizzly bear. The copper was stated by the chief *Negh-Hum-gee-nse* to have been found on an island in Alaska by Sitka Indians. The shield has been in possession of several tribes, and is of considerable antiquity. Imitations of such shields, often called *tau-shields* from the raised T-figure on the lower part, were made by the Hudson's Bay Company for sale to the Indians, but these spurious examples are much lighter than that here figured, which has recently been acquired by the British Museum.

The bronze ground of the totemic design was temporarily covered with whiting in order to secure a sufficient degree of contrast for the photograph.



Canada.

Ethnographic Survey Committee.

Report of the Canadian Ethnographic Survey Committee. Presented to the British Association for the Advancement of Science at Bradford, September 10th, 1900. To be published in full in the forthcoming *Proceedings* of the Association. **55**

The work of the past year has furnished conspicuous evidence of the great importance of securing ethnological data with as little delay as possible. While this is eminently true with respect to the white population, which is experiencing new and marked changes almost every year, in consequence of the introduction of foreign elements, often in large numbers, it is more particularly true with respect to the native Indian population. In many localities the original blood has become so dilated by intermarriage with whites that it is often a matter of great difficulty to find an Indian of pure blood. Proximity to settlements of white people has resulted in a more or less profound impress upon the social life and tribal customs, which are fast

becoming obsolete and forgotten. The old chiefs who have served as the repertories of traditional knowledge are rapidly passing away, and with their death there disappears the last possibility of securing reliable data of the greatest value. Conspicuous instances of this kind have been brought to notice during the past year, especially in the case of the British Columbia Indians, whose ethnology is of the greatest interest and importance in consequence of their possible connection with the people of Eastern Asia. At present the great difficulty of securing competent and willing investigators is one of the most serious obstacles to be contended with, and it is believed that the often considerable expense involved in the prosecution of such work is largely accountable for this condition of affairs.

It is gratifying to note that the Department of Education for Ontario has taken a very practical and active interest in ethnological studies in that province, and that it provides for the publication of the results of research in its annual reports. Evidence has latterly been accumulating to indicate the presence at one time of numerous aboriginal settlements in localities which were very sparsely inhabited when first visited by the white explorers.

In Appendix I Mr. B. Sulte continues his study of the early French settlers in Canada, covering the period from 1632-66. He traces the origin of these immigrants from different parts of France, and it thus becomes possible to establish with great accuracy the relative importance of the various stocks from which the present large French population of Canada is derived. These studies will form an important basis for more detailed studies respecting the effect of environment upon succeeding generations.

The ancient settlement of Huron Indians at Lorette, near Quebec, has always been an object of great interest to the ethnologist, although prolonged and intimate contact with the whites of the neighbourhood has resulted in marked alterations of a physical and social character. These alterations have progressed so far as to make trustworthy studies an exceptionally difficult matter, but the Committee felt that no opportunity to secure such data as might yet be available should be lost, and in Appendix II Mr. L. Gerin presents the results of a very careful investigation into the actual social condition of these Indians. He brings this into comparison with their original condition, tracing out the influences which have produced great changes among them during their prolonged residence in the province of Quebec, and subsequent to the abandonment of their old home. The condition of this community of Hurons offers a marked contrast to that of the originally similar Iroquois community near Montreal, their evolution in modern times having been almost in opposite directions, a circumstance explained by their environment in the two cases. The report is accompanied by photographs showing the present conditions of village life, which will be kept on file for future reference.

In Appendix III Mr. Hill-Tout follows up his very careful study of the N'tlaka'pamuq, appended to last year's report, with a similar careful investigation of another and markedly different division of the Salish stock in British Columbia, the Sk'gō'mic. These people in large numbers previously inhabited Howe Sound and Burrard Inlet, but they are now much reduced, and appear to be rapidly passing away. Over ninety villages at one time inhabited are enumerated. Much attention has been given to the language, which had not heretofore been seriously investigated, and which shows numerous grammatical and other peculiarities. Mr. Hill-Tout's work, in fact, constitutes a very important local contribution to the ethnology of the native races of the west coast.

This report is accompanied by nineteen photographs of Indians, taken by Mr. Hill-Tout, partly of the Sk'gō'mic and partly of neighbouring tribes, in which he is now further pursuing his investigations.

Alaska : Property Marks.

Boas.

Property Marks of Alaskan Eskimo. By F. Boas. From the *American Anthropologist*, N.S. I, 1899, pp. 601-13. 8vo. Presented by the Author.

56

Dr. Boas has followed up a clue first given in Lubbock's *Prehistoric Times* (1869), p. 10, and elaborated in R. Andr  e's *Ethnographische Parallelen und Vergleiche*, N.F., p. 84, as to the significance of the distinctive marks which are frequently marked on the weapons of the Eskimo tribes of Alaska. As these marks are almost confined to the hunting spears and other weapons of the chase, and do not seem to occur on ordinary tools, it is inferred that their object is "to secure property right in the animal in which the weapon bearing the mark is found." The frequency with which some such marks are found suggests that they are probably communal rather than individual.

The paper is illustrated by drawings of a number of these marks, on whale harpoons, walrus harpoons, and deer-spears from various localities, all (except a few from the Peabody Museum) being in the collection of the U.S. National Museum.

J. L. M.

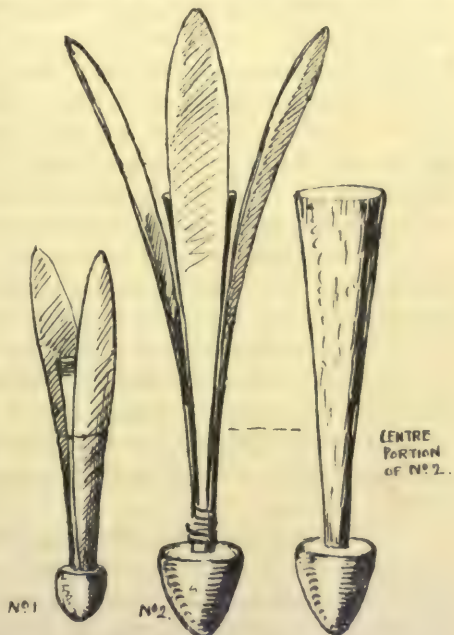
Vancouver: Salmon Floats.

Edge-Partington.

Floats for Alluring Salmon, from the North End of Vancouver Island. Communicated by J. Edge-Partington.

57

In going through some old lists in the British Museum, I came upon a description of the so-called "floats" from the north-west coast of America, from which I have made the following extract:—"Wooden contrivance used for attracting fish. It is only used by some few tribes at the north end of Vancouver Island. It is used in the following manner; when in deep water the float is loosely fastened to the end of a long spear from 40 to 70 feet in length, it is then carefully shoved down through the water from the side of the canoe as deep as the spear or pole can go; an Indian with another spear sits waiting in the stern of the canoe intently watching the spot where the float is; the float is then jerked off from the end of the pole, and as it wriggles up through the water has much the appearance of a spinning bait; a salmon dashes at it, and is at once transfixd by the spearsman; very large salmon are by this ingenious contrivance taken in deep water."



SALMON FLOATS FROM VANCOUVER ISLAND.

BRITISH MUSEUM, $\frac{1}{4}$ SCALE.

The floats are of pine wood cut from the solid, with the exception of the wings, which are of a pale hard wood. These are either inserted into the knob at the base and tied about half way up as in No. 1, or lashed on with strips of cedar bark, as in No. 2. In the latter specimen it is possible that there were originally four wings.

Nootka Sound.

Strange.

58 *Extracts from the Diary of Mr. James Strange, H.E.I.C.S., commanding an Expedition sent by the East India Company to the North-West Coast of America in 1786; with a Vocabulary of the Language of Nutka Sound. Communicated by Coutts Trotter, Esq., M.A.I.*

The notes and vocabularies which follow were collected at Nootka Sound and Prince William's Sound in 1786, by Mr. James Strange of the Honourable East India Company's Service, who conducted an expedition from India to the coast, combining trade and exploration. From a study of the narrative of Captain Cook's voyage to the North Pacific seven years previously, Mr. Strange was impressed with the belief that a profitable trade in furs might be established with the natives, and he urged the Court of Directors to establish a factory on the coast as its headquarters. The plan, however, for various reasons, was not carried out.

The expedition in question is briefly noticed in Portlock and Dixon, *Voyage round the World, but more particularly to the North-West Coast of America, performed in 1785-8*, in the following terms:—"In this year (1786), the merchants of Bombay sent two vessels under the direction of James Strange." His diary and vocabulary do not appear to have been in any way published. They were preserved in his family, and are now in the possession of his grandson, Mr. Coutts Trotter, by whom they have been brought before the Anthropological Institute. Circumstances prevented Mr. Strange from seeing much of the natives in their homes; but he mentions a few matters of anthropological interest, and the extracts which follow seem worthy of publication in the *Journal*.

"From my first interview with these people I had determined never to suffer any of them to come on board ship, and during my stay at Nootka, I always adhered to this determination, except in favour of two or three of the chiefs, to whom I wished to show some marks of respect and distinction, and who were accordingly received on board on several occasions; but as for the common people, not one of them ever went up the ship's side. In establishing this custom I am certain I thereby avoided frequent cause of quarrelling with the natives, which their unconquerable dispositions to theft would no doubt have occasioned."

"I went directly to the village, and was received, by all ranks and descriptions, in the most friendly and courteous manner possible, nor could I pass a house without being invited into it in very pressing terms."

"Words can scarcely convey to the mind of the reader an adequate idea of the beastly filth in which the natives of this part of the world pass their lives; I declare that before I was an eye-witness to it, I had a very imperfect conception of the extent of it. It was impossible to move a single step without being up to the ankles in mud, fish-guts, and maggots, and this inconvenience was alike felt within and without doors."

"The persons and habitations of the people in general of this Sound have been so accurately and faithfully described by Captain Cook, that anything I could here say on the subject would be mere repetition. Travellers are generally suspected (not always indeed without cause) of indulging fanciful exaggerations of the wonders they have seen. For my own part, I confess that if a name less established for its respectability than Captain Cook's had been prefixed to his book, I should have doubted that in describing these people the account given had been somewhat highly finished. It is, however, a tribute due to the memory of that great man to declare that he has not, in any instance that has come within my observation, ever exceeded in his descriptions that strict adherence to truth which every

historian in his communications to the world should invariably prescribe to himself."

"I now made known to the natives the object of my present visit to the village, which was to purchase a house for the reception of the sick. No sooner were my wants explained, than I had the offer of any house that I chose. I accordingly purchased one, for about the value of a shilling, which was partly constructed of six logs of wood, each of which were sufficient in thickness and length to have made a mainmast for the largest seventy-four gun ship in the British Navy; besides these, there were several smaller spars, and a considerable number of pine planks."

"In addition to the musket and pistols, a red coat and cap was at the same time solicited in strong terms, in order to complete Mr. Mackay's¹ warlike appearance. On enquiring why a red coat was chosen in preference to any other, I was informed that that was the colour the appearance of which would most intimidate the enemy. It is probably with this view they so frequently rub their bodies over with red ochre, and which I observed was invariably practised by such of the strangers as visited us, and who lived at any distance from the Sound."

"It appeared evident to them that in regard to their government, the idea suggested by Captain Cook, that each family was internally governed by its own chief, was perfectly consistent with their observations on the subject. During our stay here, we had frequently occasion to complain to the different chiefs, of thefts committed by their dependants, and as often as the culprit was detected we were sure to have the stolen goods returned, and to see punishment inflicted on the aggressor; although at the same time we had reason to believe that the act itself was committed with the connivance, and perhaps at the special command of the judge himself. Although the chief, under whose protection I placed Mr. Mackay, was apparently the wealthiest in the Sound in respect to riches, and to the number of his dependants, yet he did not on this account seem to derive any additional personal honour or respect from the community at large."

"With regard to religion, their ideas appear to be very circumscribed indeed. They hold in great respect however, one of their gods, whom they call Enekitsum (the god of snow), and to whom they pray to defend them from a long continuance of frost and snow. In my first visit to Maquilla, I had occasion to become intimately acquainted with this god. On entering the chief's house, after the forms of introduction were duly observed (for I was regularly presented by name to his lady and family), my notice was particularly attracted by the appearance of a very pretty canopy, fancifully and not inelegantly decorated with bits of fur of various sorts, and from which hung a curtain richer than any I had hitherto seen; being composed of four very beautiful sea otter skins; behind this was placed on a sort of pedestal the god Enekitsum, and on each side of him was a lamp burning. On my advancing to that part of the habitation where the figure was placed, I observed a kind of suspension and doubt in the minds of all present, whether or not I should be permitted to proceed: no one, however, offering to check my curiosity, I advanced, and examined the figure and its appendages which I had determined should not long continue in their present abode. Maquilla now joined me, and of him I enquired the name and qualities of this god, which he very willingly informed me of. I now expressed a wish to know in what manner they worshipped Enekitsum, on which Maquilla most readily agreed to satisfy my curiosity. To this end therefore an additional quantity of wood was added to a fire already considerably large, and all external air was as effectually excluded as was in their power to do, by stopping

¹ The young surgeon who volunteered to be left on shore with the natives.

every crevice they could conveniently reach. When this business was over, they all seated themselves round the fire to the number of about a hundred persons, and began a song by no means unmusical, in honour of Enekitsum, I suppose, whose name they frequently repeated with strong emphasis. After singing a considerable time, they began a dance in which Maquilla, and some of his principal people joined, having first besmeared their faces with red ochre, and put on their war jackets. The music which accompanied this dance was both vocal and instrumental; the latter consisted simply of a wooden mallet which was struck with considerable violence, (keeping time) against a three-inch plank, from which appended innumerable muscle and cockle shells, and the louder the performer thumped, the more his abilities were commended. In this dance they imitated the voice and action of a bear, the wolf and various other animals. After dancing a considerable time, in which they were perfectly overcome with fatigue, they again seated themselves in a half circle, round the fire, and a most profound silence ensued; after a short pause Maquilla, accompanied by two old men, proceeded with solemn face towards the god Enekitsum, whom they most respectfully took and placed before the fire. A large shell was now presented to Maquilla filled with oil, which he sprinkled on the fire; this naturally occasioned a considerable smoke, which was suffered to get vent by means of removing two or three planks in the ceiling of the building immediately perpendicular over the fire, and from this aperture was scattered (by a person placed there for the purpose) several handfuls of the finest down, which was intended to represent a fall of snow, and which indeed it did. The smoke, aided by the action of the fire, naturally resisted the fall of this light body, which together with itself escaped at the opening from above. Enekitsum was now re-conducted to his station, with the same ceremony and respect as was before observed. Mutual congratulations now took place, on occasion of the happy issue of their ceremonies and a splendid repast at the command of the chief was served to every one present, which consisted of the pine bark, and fish roe mixed, and a dried salmon to each individual. This fish we observed was reserved for occasions only of great festivity, and though apparently in great abundance in every hut in the village, yet it was with much reluctance that they were prevailed on to sell one of them, and a sea otter skin was not purchased at a dearer rate than a salmon."

"Notwithstanding all this parade of devotion paid to Enekitsum, as just now mentioned yet he became my property the next day, together with his curtain, on which, as I before observed, I had set my heart!"

"Amongst various other remarks made by Captain Cook respecting these people, he particularly mentions their extreme fondness for music. In the course of my commercial dealing with them, I had a stronger proof of their genius, and the retentive powers of their memory in this respect, than can well be imagined."

"In one of my lucky days I was visited by several very large canoes, filled with strangers, who from the style of their dress, and from the numbers of their attendants, appeared to be men of a superior class to the generality of those who were resident in the village. Having displayed before them a variety of goods, such as knives, chisels, axes, swords, etc., I was greatly astonished at the seeming indifference with which they were viewed by my visitors, and at the little disposition they showed to traffic for any of the articles I had thus exhibited; I was now busied thinking by what means I could strip my gentlemen of their finery (for each had on two or three fine skins) when it occurred to me to observe that their attention was seemingly called off by the singing of their attendants, and to which they kept time by beating two shells together with great precision."

"I now recollected that amongst the various articles which composed my investment there were a considerable number of cymbals, which I conceived would be no bad substitute for their shells, and would better chime in with their species of songs, which were more of the martial than tender kind. I accordingly produced a pair. The expression of rapture and delight which the first clash of them excited in the breasts of all present is not to be described. In displaying the effects of my music, I composed for the occasion a sort of ring-ting tune, which had the merit of drawing from my polite audience such bursts of applause as was sufficiently satisfactory to me that I did not sing in vain. My song was encored again and again, nor did I give over, whilst I was able to articulate. I should observe, that after I had da capo'd it half-a-dozen times I was joined in it by a great majority of all present. The consequence of this exhibition was that I stripped my gentlemen to the buff, in an hour's time, each contending with the other which should be first served; I got from some three, and from others four skins, for every pair of cymbals. My visitors now took their leave of me, and went to Maquilla's house, by whom they were all entertained. They spent the evening (as I was informed by such of the gentlemen as slept on shore) in high glee and harmony, dancing, singing and making good use of their cymbals all night long."

"I had next day a visit from several of the same party, who had still something left worthy my attention. Having selected three or four skins, I offered some articles of ironmongery for them, being desirous of reserving the remaining few pairs of cymbals I had left to some other future interesting occasion. My ironmongery was, however, utterly rejected by them. I then presented some articles of copper, which had hitherto been in great repute, but that in like manner was refused, and I was given to understand that cymbals alone were wanted. These I at length reluctantly gave, but before they were received a song was required of me. Accordingly I sang the first that came into my head; this was not relished, and, I may say, was hissed off the stage; I tried a second, a third, and a fourth, which all shared the same fate. Each man shaking his head, told me it was *claotra*, that is, *the other*, they wanted me to sing. I now perfectly understood what they meant, and that it was my yesterday's composition that was required of me. I therefore attempted to recall it to my memory, but if all the sea-otter skins in Nootka had been the price of it, I could not recollect a note of it. Nor was I much surprised at my failing in the attempt, considering it was the offspring of the moment, and that having answered my purpose, it was no less easily forgot than composed. The case was far different with many of my hearers, on whom it had made a more lasting impression, and some of them seeing (I verily believe) my embarrassment, struck up my song, and that with such precision as to time and tune, as infinitely astonished me. I now readily chimed in with them, and continued singing whilst there was anything left to sing for. It was matter of surprise to me as well as to everyone, to observe how soon my song became fashionable, and how quickly it was learned by all ranks whatsoever. In short there was not a boy or girl in the village who did not, in the course of three days, sing it as correctly as I could. I seldom, after this, bought a skin without being first called upon to sing ring-ting, etc., and which I am confident I shall never again forget."

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"The practice of bringing hands and heads for sale obtained now in like manner as when Captain Cook was here."

"In my second visit to the shore, I had the pleasure (or more properly speaking the dissatisfaction) to ascertain for a fact (and which when Captain Cook visited Nootka remained a matter of doubt in his mind), that the savage and barbarous

practice of devouring human flesh exists here as well as in the Sandwich Islands. In the course of this day's excursion, I was accosted by one of the most celebrated warriors in the Sound named Clamata, who had been previously introduced to me by Maquilla, as a man famous for his bravery and address in war, having personally slain eight and twenty of the enemy within the last ten moons. Having beckoned me aside to the most retired part of the walk, he took from under his garment, a basket, from whence he drew three hands and a head, which he desired me to buy. I conceived this to be a very favourable occasion to learn with certainty what were the purposes for which these people thus preserved the hands and heads they so frequently presented to us for sale, though at the same time I had no doubt, in my own mind, but that they were applied to the very purposes which I shall now relate."

"To this end I represented to Clamata, that I was ignorant what use I should make of them, if I purchased them. On which he informed me that they were good to eat! I seemed to discredit the assertion, with a view to urge him to the commission of that act, which on any other occasion than the present, I should have shunned the sight of with abhorrence. My hero now gave me ocular demonstration and very composedly put one of the hands in his mouth, and stripping it through his teeth, tore off a considerable piece of the flesh, which he immediately devoured with much apparent relish. However prepared I was for this exhibition, yet I could not help expressing horror and detestation at the act. He immediately comprehended my meaning, and endeavoured to reconcile me to the deed, by assuring me, that if I died, or if my friend, or his friend died, he would not eat us; but that the hand he had then eaten, was the hand of his enemy whom he had killed in war, and that the eating of it was a deed acceptable in the eyes of heaven; to which he at the same time pointed. He now pressed me to buy them, which I positively refused doing, and indeed on every occasion I strongly discountenanced the purchase of them, lest it might become an inducement to these savages to go purposely to war, in hopes of being able to dispose to advantage of the miserable remains of their conquered foes."

"This kind of traffic was always carried on with seeming secrecy, and an apparent fear of being detected by their own countrymen; and they therefore watched the occasion of parting with their goods at a time when their companions were otherwise busied; from hence I should infer that the practice was either considered among themselves as dishonourable, or (which is by no means improbable) that this secrecy was only assumed with a view thereby to enhance in our eyes the value of their goods; for I should observe that they were never purchased but at a most exorbitant rate."

"I considered it therefore high time that we should now take leave of our Nootka friends; which I did with the pleasing reflection, that in all my intercourse with them, I had never been under the necessity of recurring to violent measures in any one instance. This was more owing to the precaution I took to prevent mischief, than to any good disposition in them not to attempt the commission of theft, which they were always ready to do, whenever an opportunity offered."

"At daybreak the next morning¹ we were visited by a canoe in which were four men. They immediately came alongside of us, and began a kind of song or harangue, in the same style as those of Nootka; and were in the like manner painted and studded with feathers. In my invitations to them to come on board I made use

¹ Just after passing the Scott Islands, so named by Strange after the chief promoter of the expedition, a little north of the north end of Vancouver Island.

of all my knowledge of the Nootka language, three or four words only of which they understood. They brought with them two sea-otter skins, which though both old and ragged, I judged proper nevertheless to purchase, rewarding them at the same time most liberally for them. The extravagance of their joy on viewing the iron I gave them was little short of madness! They appeared to be totally destitute of any European articles whatever. It was, however, evident they knew the value of the commodity I gave them, otherwise they would not have expressed the satisfaction they did on receiving it."

"Compared with our Nootka friends, these¹ appeared little versed in the art of traffic, and never hesitated a moment accepting any offer that was made to them. They as readily concluded the bargain for one bead, as they would have done for twenty. Colour alone constituted the value of the offer, and none other than sky blue would have been received although the number offered had been ten times multiplied."

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"I conceive there are stated periods at which alone the natives of this coast inhabit the sea-shore, and which at that time they are compelled to do, in order to procure their winter stock of fish; which when once obtained, they return to their usual places of abode, which I doubt not are considerably inland. I am the more inclined to this belief, from my experience of what happened during my stay in Nootka. Even so early as our first arrival there, the inhabitants of Friendly Harbour Village were already beginning to remove, and on landing we accordingly found many of their habitations deserted. They were, however, soon occupied again by their former possessors in consequence of our arrival. On our first coming here, we computed the number of inhabitants residing in this village to amount to about five hundred persons, yet long before we took our departure that number was reduced to about one hundred. So soon as each family had disposed of their skins, and other articles of trade, they immediately began removing their effects which they secured on rafts, made of the planks and smaller timber which composed their habitations, and these, according to their bulk, were lashed to four or six canoes—each person had his particular winter stock of fish, which were packed up in bales, and well secured with mats."

"From our daily intercourse with the people of Nootka, we had acquired so much of their language before we left the Sound, as to be enabled to comprehend almost everything they said to us, and likewise to make ourselves understood by them. I was particular in my enquiries why they quitted their present habitation, and where they went to. In answer to these questions I was informed that they were going far far off, and that the sun would sleep five times before they arrived there—that having now got plenty of fish, they were going to hunt and kill bears, deer, and sea otters."

"So short was our stay and so momentary was our intercourse with the inhabitants of this (Prince William's) Sound, that little or nothing can be said of them in addition to what is already made public in Captain Cook's account of them. In as far as my observation enables me to form a judgment of their dispositions and manners, it inclined me to consider those of them I saw very differently from what they appeared to be in their transactions on board the *Resolution* and *Discovery*; from a perusal of which it is natural to conclude them a bold, enterprising race. In their intercourse with us they appeared to be in every respect the reverse of this; being timid and shy of us to a great degree. It was no uncommon thing for me to traffic with such as visited the ship for the first time, through the medium of a second

¹ At Prince William's Sound, 11° further north (60°30' N.). They had hardly any furs.

person, who acted as agent, the stranger in the meantime keeping at a considerable distance from the ships. This I found to be more particularly the case where the party had the appearance of being a man of distinction. After two or three visits to the ships some of them, however, got so far the better of this mistrust of us, as to venture alongside, but never did they so entirely shake it off, as to accept at any time the repeated invitations I gave some of the better sort of them to come on board. I found them universally less skilled in the art of trafficking than our friends at Nootka, who were as thoroughly versed in all the little frauds usually practised to allure and deceive, as if they had the experience of a century's intercourse with us."

"In the last excursion which our long boat made to the northward of the Sound, our people, at a distance of 30 or 40 miles, met with two deserted villages, which contained from ten to twelve houses each. These they found to be not only infinitely better constructed so as to exclude the inclemency of the climate, but also much more neatly finished than those at Nootka. The inhabitants of this Sound (to judge from what we saw of them) appear to be a much more ingenious race than those to the southward, excelling them greatly in works of art, not only in respect to execution, but in point of variety. In the article of dress they appear to be well provided, having very comfortable garments of fur and likewise a most excellent substitute for our thickest and warmest bath rugs. I used my endeavours to procure a piece of this cloth without, however, succeeding, although the price I offered for it was equal to what would have purchased half a dozen good skins; it is probable, therefore, that this manufacture is scarce and in the possession only of their principal men. I procured a skin of the animal of which it is made, which has more the appearance of a sheep skin than that of any other animal I know. They are likewise well provided in the article of boots and gloves, and their oil skin dresses are most admirably calculated to keep them dry in rainy weather."

The vocabularies which follow are, as Mr. Strange says, supplementary to the list of words given in Captain Cook's narrative, only some two dozen words being common to both. Mr. Strange's list is four times as numerous as the other, and includes the numerals.

ADDITIONS TO CAPTAIN COOK'S VOCABULARY OF THE NOOTKA SOUND LANGUAGE.

Compiled by Mr. James Strange, Commander of an Exploring Expedition, 1785-6.

Nootka.	English.	Nootka.	English.
Quaessmubt	Peas.	Nonook	Singing.
Klatlasstoolkceass	Tansy.	Mowa, or Mowa-ash 15	They are going.
Klehtsweebt	A species of dandelion.	Toohsheetl	To leap.
Mamok	Weaving or knitting.	Eatsook	To walk.
Sootsinneck 5	Washing.	Kamutkook	Running.
Sootsinneck haweelkh	To wash for a friend, or to make clean for the sake of a friend.	Aakussha	Marching, or walking with a measured pace.
Toomeess	A cinder.	Oopkatihklimmah 20	A club or tail of hari.
Chakhéchaha	Chiseling.	Mookmookqua	Cutting with an instrument resembling a chisel.
Sootsoohwa	To hammer; beating with a wooden hammer.	Klamanoolkh	To climb; up a tree.
Chaeak 10	A chisel.	Seeatla	A sister.
Tooshquo	A green cod.	Seeak	Me, or mine, belonging to me.
Kawunnah	A sole or flounder.	Chookqwakutsaponecak 25	Enter; an invitation to go into a house.
Klehecanim, or Klehy-animmé.	A net for catching birds.	Satewa	A pine top.

Nootka.	English.	Nootka.	English.
Tushee	A road, or path.	Chapats	A ship, or a canoe.
Katskamen	A red butterfly.	Seepoos	The keel of a canoe.
Souwak haweelk	Intimate friends; liter- ally one friend.	Klawhitseem 80	The carvings on a canoe.
Sooquess.... 30	Go bring; fetch.	Sapum	The cross sticks of a canoe.
Synooa	Sea-cars.	Anuklimma	The bottom of a canoe.
Sheesla	The beard of a mussel.	Coopkanimmo	The bow of a canoe.
Kakeenuabt	A kind of small ground canoe.	Abapukht	A species of sea-weed.
Matsquinnah	Any kind of fly.	Konee-emmitz 85	Chickweed [but cf. 215.]
Ko-ooshinné 35	The croaking of a crow.	Klatlasstookyeuss	The earth nut.
Wasuksheetl	Coughing.	Ayakhtl	Trembling with fear.
Tahmeess	Spitting.	Aealkh	An eagle's feather.
Antomeess	Spittle.	Awatinné	An eagle.
Enixsheetl	Blowing the nose.	Achimma 90	Lines, or figures painted on the face.
Chootquaheecak 40	An instrument for kill- ing fish.	Cheechetl	Tattooing.
Choochat Sooma	To kill, or catch fish, with this instrument.	Tahok	Signifies fear, or a per- son very much afraid.
Ass	Large, grand, a great many.	Tahok Moquilla kah- sheetl.	Moquilla is afraid of death, or of being killed.
Paquinnceé	A skate.	Se-essook....	A small fishing line.
Eatcha	A dog-fish.	Chihkimmé 95	A fishing hook, dressed something like our fly hooks.
Kychin 45	A louse.	Täntukklemma	A bladder used in fish- ing.
Eshtseep	Turpentine, resin or gum.	Sooma	A name for fish in general.
Kloobkoomah	A bird's bill.	Keeteleek	An upper garment.
Wacheechee	A bird's feet.	Chepulkhmeess	Fish scales.
Neekeak	A bird's claws.	Klootsamma, Tootsma, or Tlootsma. 100	A woman.
Kihleephasspatoo 50	A bird's wings.	Haqualeess	A girl.
Komitz	A bird's head.	Hychinna	A kind of cockle, or clam.
Nachoo	The tail feathers of a bird.	Kleethak....	The breast and belly of a man.
Keyssmeess	Blood.	Habytah	The fern root.
Aké	A wound.	Touqua 105	A well.
Mutesheetl 55	To tie.	Aook	The lake.
Okkqueetl	Flying.	Euhquat, or Euhquot ...	A village.
Hotyah	A sword or sabre.	Eneetsheetl Euhquat...	Return, come back to the village; an invi- tation.
Quahameess	Red ochre or paint.	Makhtimma	Bracelets made of plaited hair.
Quaquatlche-chee 60	Large chests, ornamen- ted with sea-otters' teeth.	Kleeshklinnak 110	Boots.
Hysean	Mine; it is mine.	Cheebheetl	To pull, or draw.
Emeex	Cakes of bears' grease.	Klehaksalip	Buried in the ground, or covered with earth.
Klipshimmahyat 65	Sweat.	Klyeeksheetl	To knock into the ground, as a stake, etc.
Kamuthaxee	Certain figures painted with red ochre.	Suhsheetl	To stick anything into the ground, also to stake.
Moquinnak	Sprats.	Tsoostsoosa 115	Digging.
Haook	Fit for eating, also an invitation to eat.	Quahtaap	Breaking a stick.
Issenoaa	Cranberries.	Paatleek	A flambeaux.
Ougecé, or Awah	The name of a poisonous root, with which they rub the points of their arrows.	Seeseemitz	Earth, the ground.
Ohweek	A quail.	Klinteemeess	Ashes.
Mäak	Poison.	Tabtseenoolkh 120	A small folding knife.
Pohé 70	A halibut.	Klanooquxim	The handle of a knife.
Amoet	The backbone of a fish.	Taquinneek, or Soo ...	Grasping, or the hand folded.
Matlémah	Soot.	Sukhsheetl Weena	To kill, or shoot the strangers.
Tanass	A boy.	Aptssheetl	Theft, stealing.
Sooquolchee	Bring, run and bring.	Chooé 125	Play, do play.
Sooquolchee Quotluk ;	Run and bring the sea		
Sooquolchee Seeké-	otter's skin; run and		
maillé. 75	bring the iron.		
Ayeoopato	The bulb, or head of the large tangle.		
Quumma	The stem, or stem-post of a canoe.		

Nootka.	English.	Nootka.	English.
Hyea	Go out of the way, or to that side.	Eilkhmupt 165	Nettles.
Pohtkleetl Tootsma ...	The women are running away from fear.	Kawatkamubt	Wild spinach.
Kooweelkh	Thieving, or hiding a thing after it is stolen.	Homāāk or kilsoop	Herb John.
Neenaneech	Let me see it; examine it.	Po-opt	A kind of rock moss.
Chooquatlik 130	This way.	Pootspotsumpt	Mint.
Ko-osheetkamubt	Jessamine.	Silsque 170	A bird's excrement.
Sheetlok haoooa....	They are going away to a great distance.	Akamubt	Goose grass.
Klooshinnakak	A shot from a gun, or word they used to express their fears of a gun.	Koochuk	A particular kind of fish hook.
Sihseelwa	Scratching.	Puttayhmubt	A rose bush.
Koesha 135	Smoke.	Kleightsweebt	A rose.
Kutskiya	Beating, or malleting with a stone.	Klooweekmubt 175	The plant with very bright red berries.
Oophyak	Flame.	Quoteeēak or quotleeat....	Heavy; it is very heavy.
Kleetleka	Sparks of fire.	Tummakubt	The prickles of the rose bush.
Wehmupt	A wreath of a pine branch.	Mowā-āssh	Come away.
Cheechiskinneck 140	Children; young boys.	Poohsheetl	Blowing with the mouth.
Sooheēak	The bone point of a spear.	Wuhsheetl 180	Breaking wind.
Eilkhhandimmé ...	The feathers of an arrow.	Ekho	This, these, or that.
Tsecoop	A bow string.	Haoooa	A great way off, without defining any determinate distance.
Teecheetna	Sharpening any instrument.	Sitseeahmubt	The pear tree.
Klwahmeess Nāās 145	The sovereign of the sky, God Almighty.	Kakalmubt or katska-nuksmubt.	The elm.
Queheēak	A stone for polishing metals.	Shutlmubt 185	The fern.
Teekatsuk, or Teesh-cheetl mooxie.	Throwing a stone.	Akaetso	Red clover.
Kaweebt	The brambleberry, or bush.	Klatlamubt	A species of willow.
Keilkkintapah	The strawberry, or tree.	Sohasht	Salmon.
Wetsnah 150	A caterpillar.	Pillukh or Pinnukh ...	A stone hammer, or pestle.
Kakeesm	A species of grass.	Akhak Akhak 190	What have you got? or what do you want for what you have?
Mowitch or Kobatseek	A deer.	Sootuhta....	A gimlet.
Kleethak	A bear's skin.	Eutsuss eatsook....	Go away, go out: as out of the house; this is spoken in displeasure.
Cehemees	A bear.	Eyateeatah	Dancing.
Keeseeu 155	A long string of plaited grass, bound round the head like a turban.	Weeekatish	Not any; I have nothing more.
Klyhappa	Red bream.	Okox 195	A conical cap, with various figured ornaments.
Oopmahsheetl	Pouring water, as out of one vessel into another.	Milse or Milsooa	A fishing spear with two prongs.
Aoupghk-ka	Whistling.	Sequerné	The two prongs.
Noahksheetl	Swallowing.	Akeeēk	The bone barbs.
Mamattee 160	A crow.	Sooksooe	A plane, or the frame of one.
Mahinneh	A pole.	Mattilhsimma, or mattilksheetl. 200	To tie; binding.
Naook	Shall I come, or I will come.	Tamoksheetl	A knot.
Moeappammé	The name of an enclosure where they perform some religious ceremonies.	Klookass....	A loop.
Kowas [cf. 206]....	A little deformed figure of a human being in the Moeappammé, which we understood they worshipped.	Kleesilkh	Clean.
		Aeemahai	The flower none so pretty.
		Moweh 205	Look at it.
		Kowäss or Koäss [cf. 164]	The name of one of their divinities; this is also either the name for the nation, or for a number of people collected.

Nootka.	English.	Nootka.	English.
Enekktesem	The god of snow whom they worship and pay great veneration to.	Klemesheetl makyo klamaht. 245	Warming water with red hot stones, which they lift by the wooden tongs.
Hanook Enekeetssem	This may either signify, take care of Enekeetssem, or Enekeetssem will take care of you.	Satsaweelkh	A carved wooden spear.
Enekeetssem haweelkh	An expression frequently used, and probably means that Enekeetssem protects their friends.	Echamoot	A bladder, or skin, in which they preserved their oil.
Eiss 210	Flax, or a substance resembling it.	Cheetapuximma	A mat on which they sit and lounge.
Outsookhsils	Tears, weeping.	Esookotté	A pearl shell.
Tomilkh	Winking.	Oopeak 250	Trap baskets for catching fish.
Eenapubseem	A large whale spear.	Haymma	A small wood dish, which they use on various occasions.
Schuk-kusht	Smoked sardines.	Sootskeek	A stone chisel.
Konéemitz [<i>cf.</i> 85] 215	A species of seaweed.	Klaklahtimmé	The foot.
Kaoomen or kaomené....	A pigeon.	Chahitseeé	The knee.
Ohytzo or chahwoitz ..	A little square vessel for holding water.	Aptsootachee 255	The thick of the thigh.
Hamootémilkh	A large horn spoon.	Seehwea	The scab.
Akha or ekho Takna	His, this, that or my child (son).	Kloopullé or klupa	The sun's beams.
Hestoquattohkqua 220	The name of a chief's wife.	Sutsaksteelkh	The setting of the sun.
Hunneekkea or hulleekkea	A trough.	Opkustah	The rising of the sun.
Apkhesht	Dried fish of any kind.	Oopatto 260	Day.
Moquilla....	The name of a young chief.	Athya, or Atssheetl	Night or darkness.
Nyahpatto	A cradle.	Waeish	Sleeping or snoring.
Klitsinnaka 225	Moquilla's brother's name.	Klemiksheel 265	Awake.
Mihtook	One blind with age; a very old person.	Quelkhquatla	One half of the moon.
Makysnamma	A bow string.	Milkhlemeootl	The full moon.
Moksee, or mosksee	A stone hammer, also stones of any kind.	Tatooss	The stars.
Atshussee	A mallet.	Quoeentseek	A wolf.
Amet 230	A shell used for a spoon.	Eenema	A woman's breasts.
Quespees	The woods.	Cheetlécheea	Cutting with a knife.
Apseoop [<i>cf.</i> 294]	An armour for the head, made of hair and leather.	Zseetsecastikooma 270	The plaits of a woman's hair.
Chee-chee-chee-chee-quaquatl.	Teeth, or bones; with which they ornament their chests.	Seeahy	It is mine.
Quotsitta	A chest.	Keeceek	A quill.
Enekeets.... 235	An enemy.	Aceatsh	The large feathers of a pigeon.
Takna Seekya	A female child, or daughter.	Meeteemelkh	The war dress.
Euwatl haweelk-kloohsh	A friend's medicine, or medicine from a friend is good.	Kleesigkhoo 275	The figures on this dress.
Teechuttas	A wooden box for holding arrows.	Wakeéu, or Waksheetl	Making urine.
Humumma	A large snail shell.	Noocheu, or Nooap-noolkh.	The sea.
Humumunnaksheetl 240	Drinking.	Seekootlash Zseehaté	Bring the arrows.
Cheemak....	Carving on wood.	Hoquoluk	A chest.
Eksheetl ehque....	Polishing with a shark's skin.	Quasighaak 280	The leather dress, ornamented with quills and hoofs.
Honeekkea kawutsass	Eating fish out of a trough.	Zseechatté	A musket or an arrow.
Klamulh....	Wooden tongs.	Eenalksam	A spar.
		Qulkkook	Planks.
		Heesheenuce	A mantle made of a stuff resembling flannel.
		Mukeea 285	A fire stone, used in heating water.
		Kutsh-hak	Leather.
		Kookikoooha	Shaving.
		Kakhass	A spit.
		Keukshook	A small spar.
		Seepoot 290	A hat or cap.

[illegible]

Nootka.	English.	
Haeemehtlaput atla- qualkhuk haeeeo ...	One hundred and fifty.	N.B.—As much of their reckoning as consists of tens they frequently enumerate by signs, in which case <i>haeeeo</i> is entirely omitted. From twenty to thirty, and from that to forty, and so on, the numbers that express the first nine, are used without any variation. For having computed nine, it is customary with them to clap or clasp their hands together, which always signifies ten. Thus by two claps we are to understand twenty, three claps thirty, etc.
Sowaqualkhuk haeeeo ...	One hundred and sixty.	
Haeeeoekh	One hundred and seventy.	
Sukkytzuk haeeeo	One hundred and eighty.	
Haecemhalputsukkytz haeeeo. 380	One hundred and ninety.	
Atleook haeeeo	Two hundred.	

VOCABULARY OF THE PRINCE WILLIAM'S SOUND LANGUAGE.

Prince William's Sound.	English.	Prince William's Sound.	English.
Eelalee	An expression of friendship similar to the <i>haweelkh</i> of Nootka; it sometimes too comprehends <i>haweelkh nahaié</i> , which is begging a present of you on account of friendship.	Teekuk 35	The forefinger.
Keenahlook	A dress or jacket made of the entrails of some animal.	Koogakleeé	The middle finger.
Toksheets... ..	A fishing spear.	Peenaek	The ring finger.
Meek, or Week	No.	Ekursqua	The little finger.
Tungé 5	A bow.	Chootee	The ears.
Wenaka, or Pakuan	A paddle.	Sheetoa 40	The nails.
Ameeleek	A canoe.	Eenga	The eye.
Noonookoon	A seal's skin.	Ooloo	The tongue.
Shuggnaluk	A fine twisted fishing line.	Natga	The feet.
Haakee, or hagee... 10	A basket.	Koomooa ...	The leg.
Aeeweenuk	A hat, or one of their conical caps.	Agulchee 45	The white bear's skin.
Noogaweeek	The wooden cap made in the form of a seal's head.	Pedok	No; no more, or I have nothing more.
Adkooga	A dress made of the skins of birds.	Nahloomuk	The stool which they sit upon in their canoes.
Cheeqnea	Ornaments for the nose.	Kapaka	A bladder, or a skin blown out like one.
Oongneet 15	The beard.	Cheemoouk	More, give me more.
Gneek	The nose.	Loocheen 50	Their buskins.
Chooduk... ..	The ear.	Kai	What is that?
Aloogana... ..	The brambleberry.	Mudjuk, or Koonee	It rains.
Utcha	The blueberry.	Esht-est-esh	Ho! you! do you hear? calling to one.
Aksookok 20	Oil, or oil in a bladder.	Kuttak, or Oolooak	Red ochre or paint.
Eigok	A dog.	Tahoo 55	Take it.
Hok	An arrow.	Eamak, or Tooneeu	Blue paint.
Nooet	The hair of the head.	Neegoowahtok	A pump, or a hollow tube of wood which they use as one.
Cheepa	A skin like a sheep's.	Eikowanuk	Pumping, or sucking the water out of their canoes with the above tube.
Natoonishuk 25	An otter, or its skin.	Choolook	A feather.
Etaga	An otter's paw.	Sheetreega 60	The proper name of a man.
Pameela	An otter's tail.	Aleek	The name for their coat of mail.
Nushikoo	An otter's head.	Nooquak ...	An instrument for casting darts.
Peiktok	The bone barb of an arrow.	Laklak	A martin's skin.
Oonge 30	The otter's whiskers.	Keequeak-kee	Cutting with a knife.
Noutee	The teeth of any animal.	Cheekoo 65	A knife.
Pamoollee	The otter's claws.	Ekooanuk	Wood of any kind, but more particularly fire-wood.
Chooloo	An otter's fur.	Apsheok	Smoke.
Nungeena	The thumb.	Koonuk	Fire, or a spark of fire.
		Pee-euhta	The proper name of a dog.

Prince William's Sound.	English.	Prince William's Sound.	English.
Aganuk 70	A woman.	Kantahphuk	An oblong dish, made like our chip boxes.
Ohwhinné	To-morrow.	Noweungwashuk 100	A blue gull.
Yamak	A small fishing spear.	Choohwak	Its bill.
Ko	Take it back again, refusing an article in bartering as not sufficient.	Eetega	Its feet.
Neentook	A cover for preserving the barb of an arrow.	Cheetooa	Its claws.
Oongmea 75	The barb of an arrow.	Shakhé	Its wings.
Waloo	The point of a spear.	Taeeduk 105	Come here; an invitation.
Agalehou	What is that?	Taeeduk eelalee	Come here, for they are our friends.
Koonahamego	A louse.	Enweila	The sinews out of which they make lines.
Choook	A hatchet.	Quehak	An earring of pearl shell.
Cheelénuk 80	A very fine plaited fishing line.	Kullingeuk	A bag made of the gold beater's leaf.
Tooptooquea	To eat, fit for eating.	Keena 110	A wound.
Nippeoon	A root like the fern, which they eat.	Aeetuk	Mitts made of the bear's skin.
Cheenohtak	A quiver.	Koeeek	Coughing.
Eualoo	A thick square line made of guts.	Tuneehluk	A bear.
Keeloo 85	The intestines of which they make the stuff, resembling our gold beater's leaf.	Ebugeeak	The holes in the under lip.
Meengoon	A needle.	Alok, or Atlok 115	One more, give me one more.
Tuphak	A fishing line made of guts.	Eengé	Let me see it, or let me look at it.
Tummeeneuk	A goose.	Koobeeteak	Whistling.
Nusikootoleeak	A wild duck.	Oona	Buy it, or give me that and I will give you this.
Kalshkanuk 90	A magpie.	Chitló	More; give me more.
Teytweeak	A kingfisher.	Makook 120	They sometimes used this word in the same sense as it is at Nootka.
Togoonuk	Dead.		
Ehlebit	A present; keep it.		
Hamilkquok	A mussel shell.		
Peetoong... 95	Dried salmon.		
Cheemeh	A small blue bead.		
Sungaé	A small image.		
Keelaquok	A rattle of dried barnacle shells.		

NOTES ON THE ABOVE VOCABULARY.

Besides Cook's vocabulary above mentioned several other lists of Nootka words have been published. They were republished by Buschmann (*Abh. der k. Academie der Wiss. zu Berlin*, 1857, pp. 366ff) with an alphabetical key. The titles of these four works there cited will be found in Pilling with the exception of the *Relacion del Viage* (Madrid, 1802).

In Strange's vocabulary a few words are repeated, sometimes with a change of meaning; *Konee-emmitz* means chickweed (85) and a sort of seaweed (215); *Kowas* means idol (164) and is the name of a god (206); *apseoop* occurs twice (232, 294). *Kapsap* (337) is struck out without being replaced by any other word.

Strange evidently wrote down these numerals at different times, or copied them very carelessly from his notes, as is apparent from the variations in the spelling of the numbers from ten to twenty. The scale is evidently vicesimal, but there seem to be considerable errors in the higher numbers; the terms for seventy and eighty are apparently omitted and the relations of the subsequent numbers as far as 190 correspondingly shifted. The spelling is throughout very irregular, cf. *sakaitz* (20) and *sukkytz* (180 [200]).

N. W. THOMAS.

CENTRAL AMERICA.

Costa Rica.

Sapper.

Ein Besuch bei den Chirripó- und Talamanca-Indianern von Costarica. Von K. Sapper. (*Globus*, LXXVII, 1, pp. 1-8, 28-31.) Presented by the Author. **59**

The author's journey, undertaken in the spring of 1899, covered much the same ground as that of Dr. Bernardo Thiel in 1889-90 (*Viajes á varias partes de la República de Costa Rica*, San José de Costarica, 1896, esp. pp. 36-51).

He describes in detail the typical round or oval houses (*palenque*) and the daily life of the natives, figuring a Talamanca *palenque* (Fig. 1) with plans and sections; Talamanca women grinding with a large saddle quern (Fig. 2); Talamanca man fishing with bow and arrow (Fig. 3); and women in everyday costume, carrying burdens with a band over the forehead (Fig. 5), or children in a sling of cloth astride of their hips behind (Fig. 6). Fig. 4 gives a river scene, with dense vegetation and a native boat; Fig. 7, the Talamanca chief, Antonio Saldaña, in European shirt and trousers, native feather headdress, and necklace with pendant; Fig. 8, three other Talamanca men with feather headdresses and staves. The former native costume consisted of a girdle, or in the case of the women a broader wrapper of bark cloth (*detzí*) made from the *mastate* tree in the usual way by boiling and beating; but European clothes are beginning to be common. The majority also of these Indians are now nominal Christians, and little was to be learned of their former belief or social institutions; but the dead are still exposed to decay on a sort of platform, the bones being subsequently smoked over the house-fire and put away in burial-places, which are kept secret, with a ceremony accompanied by drinking, singing, and beating of drums covered with iguana-skin. The author gives a full description of a peculiar wind-instrument made of a marine spiral shell with a hole bored in the side and used like a flute, and appends examples of native music. He notes particularly the strongly marked chanting intonation of the ordinary speech of the Chirripó Indians, ranging over intervals of a fifth or a seventh, and admitting clear breaks of a third or a fourth.

The author also visited the fast vanishing tribe of Estrella Indians, who belong to the same race and linguistic group as the Chirripós, and notes their habit of using a short bow and headless arrows indoors, to scare away intrusive dogs and pigs without troubling themselves to move.

J. L. M.

Mexico.

Howarth.

The Cordillera of Mexico and its Inhabitants. By O. H. Howarth, C.E., F.R.G.S., F.G.S.: read before the Royal Scottish Geographical Society, December 14th, 1899. (*Scottish Geographical Magazine*, 1900, pp. 342-352.) **60**

After describing the country itself, and its fauna and flora, the author classifies the human inhabitants of the Great Cordillera as, "(1) the aboriginal or Indian population; (2) the modern or business population, concerned largely with mining and allied trading pursuits; and (3) . . . scattered individuals or families, whose presence in the remote mountain nooks of the great range is often difficult to account for except through the chapter of accidents, and forms an interesting subject of enquiry." In regard to the first class, "the few surviving families of Apaches, Tamaris, Cotas, Yaquis, and other mountain tribes are rapidly undergoing absorption, as one after another is led gradually to discover that industry pays better than fighting."

"Amongst some of the native tribes, who have come in contact with even Mexican civilisation, it is curious to notice that the fact of being an 'Indio' is associated with a certain sense of reproach, and an anxious desire is sometimes evinced to claim 'Mexican' nationality as well, the idea being evidently connected with a more advanced phase of existence. In fact, the term 'Mexican' in a general sense must now be taken as representing a distinct nationality." (p. 349.)

"The warlike sections of the Indian race are rapidly ecoming extinguished," even the Apache, of whom only a few families remain in the wildest part of the Sierra Madre in Sonora. "For the most part the tribes between the north-west and the far south are small of stature and inoffensive in their character, but in the southern States of Oaxaca and Tehuantepec the Zapotecos, a people of superior physique and intelligence, represent probably all that remains of the ancient Mayas."

Of the "modern population," the author notes as a remarkable characteristic the "hereditary poverty" of the mountain Mexican, "his placid acceptance of all sorts of adverse conditions of life without the slightest effort to remedy them, even when the means lie to his hand . . . it was not the way of their forefathers to do or desire such things" as comforts or luxuries, "and even actual physical suffering does not seem to prompt them to the attempt," *e.g.*, "a fire on a frosty night is a proscribed luxury." (p. 351.)

In regard to the waifs and strays Mr. Howarth gives curious instances of Europeans who have found a retreat up country, and in some cases almost forgotten their native languages in their solitude.

The paper is illustrated by photographs, among which are "A group of Pueblo Indians" (p. 342); "A Mexican Prairie Schooner" (a flat-bottomed cart with a pole, on massive wheels, carrying a hut of hurdles and boards with thatched gable roof, p. 344); and "A Miztec's house and family" (wooden frame, with hurdle walls and thatched roof, p. 346).

J. L. M.

SOUTH AMERICA.

Colombia.

Dalton.

61

Note on a Stone Figure from Colombia, S. America. Communicated by O. M. Dalton. (Plates I-J).

This interesting figure, both sides of which are illustrated, was obtained at San Augustin by Rear-Admiral Dowding, R.N., in 1899, and has been presented by him to the British Museum. It represents a warrior with shield and club, wearing a waistcloth and a fillet round the head. Statues of this kind, dating from a period anterior to the Spanish Conquests, still exist in considerable numbers about the Upper Magdalena River, but they are said to be gradually sinking in the soft earth and disappearing from sight. Most of them are larger and heavier than the example here shown, and for this reason the difficulties of transport to the coast are considerable. Admiral Dowding had secured a valuable series of photographs illustrating some forty or fifty of these larger figures, but these were most unfortunately lost owing to the wreck of a steamer in the River Patia. An account of these remarkable monuments, with several rather rough illustrations, will be found in C.C. Marquez, *Prehistoria y Viajes*, Bogota, 1893.

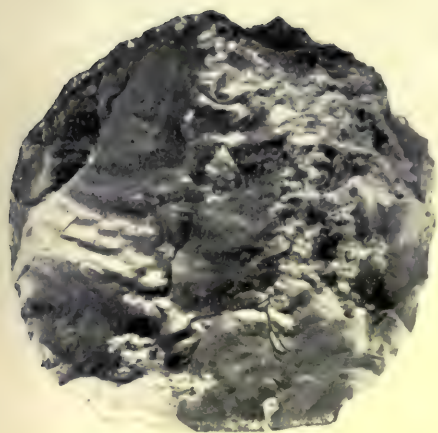


FIG. 1.

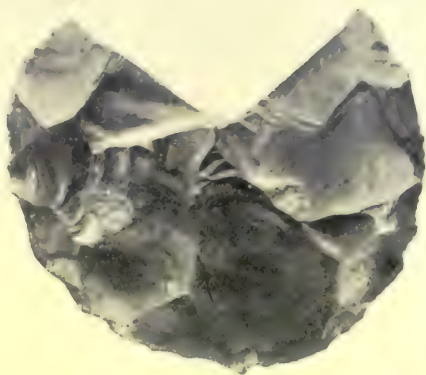


FIG. 2.

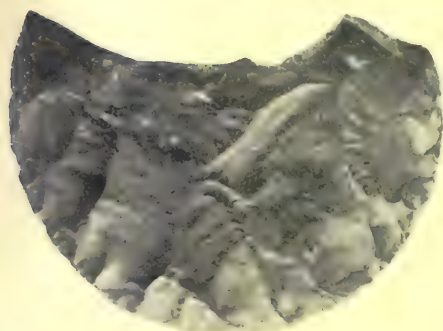


FIG. 3.

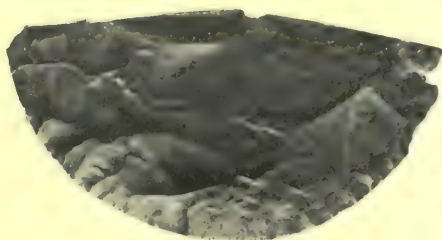


FIG. 4.



FIG. 5.

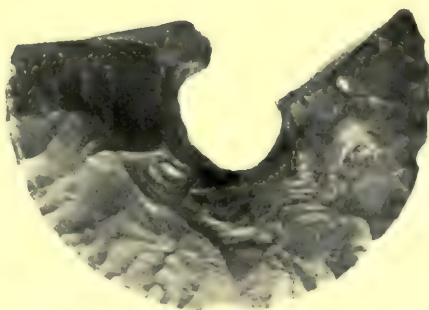


FIG. 6.

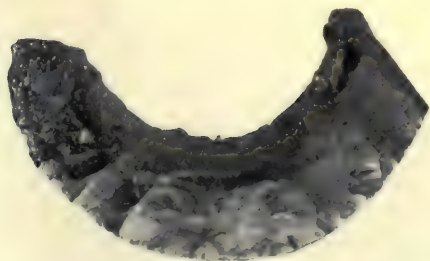


FIG. 7.



FIG. 8.

BRACELETS OF FLINT FROM EGYPT.

ILLUSTRATING SUCCESSIVE STAGES IN THEIR MANUFACTURE.

(Printed from blocks kindly lent by Dr. H. O. Forbes.)





1.—FROM HERAKONPOLIS: IN THE
GLAZED MUSEUM.
a. Obverse. b. Reverse.



II.—PROBABLY FROM ABYDOS: PART IN THE LOUVRE, PART IN THE BRITISH MUSEUM.
The three surviving fragments are represented pieced together.



IIIa.



IIIb.

III.—FROM HIERAKONPOLIS: IN THE ASHMOLEAN MUSEUM, OXFORD.

a. Obverse. b. Reverse.



Va.



Vb.

V.—PROVENANCE UNKNOWN: IN THE GIZEH MUSEUM.

a. Obverse. b. Reverse.



IVa.



IVb.

IV.—PROVENANCE UNKNOWN: PERHAPS FROM ABYDOS: IN THE LOUVRE.

a. Obverse. b. Reverse.



VIIa.



VIIb.

VII.—PROVENANCE UNKNOWN: IN THE BRITISH MUSEUM.

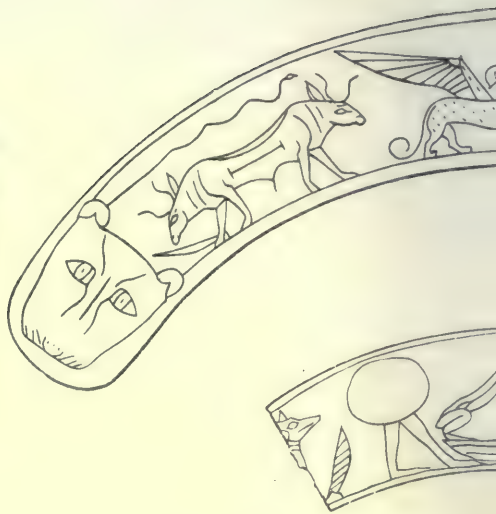
a. Obverse. b. Reverse.

[VI: see Plate D.]





Xu. Obverse.

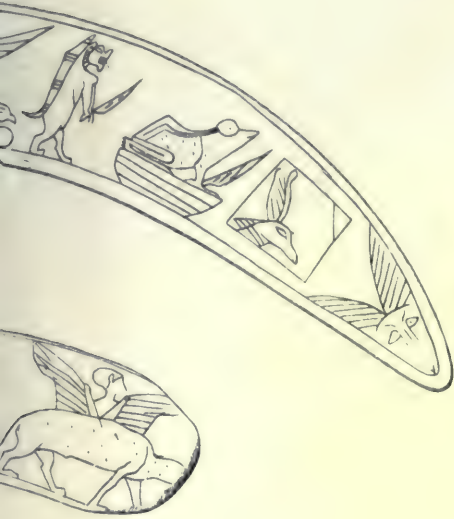


VIII.—IVORIES: IN THE BRITISH MUSEUM.



VIa. Obverse.

VI.—PROVENANCE UNKNOWN: THE LARGE FRAGMENT IS IN THE BRITISH MUSEUM;



MUSEUM: HALF REAL SIZE.

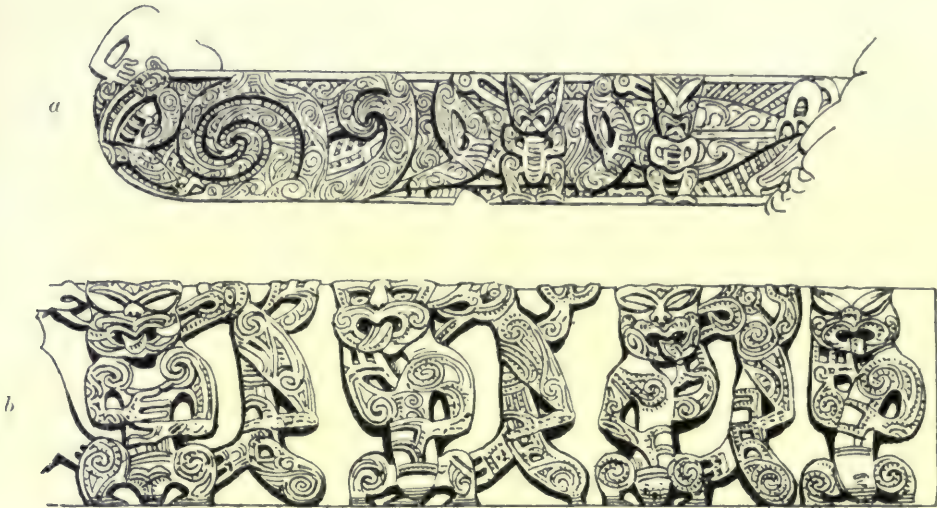
Xb. *Reverse.*



Vib. *Reverse.*

ALLER ONE (X) ABOVE, WHICH FITS IT, IS IN THE ASHMOLEAN MUSEUM, OXFORD.





MAORI CARVINGS FROM A PATAKA OR STORE-HOUSE: NOW IN THE AUCKLAND MUSEUM.

To Illustrate the Genesis of the Maori Scroll Pattern from representations of Manuvas.
(*Miscellanea*, 1900. a. No. 41; b. No. 40.)



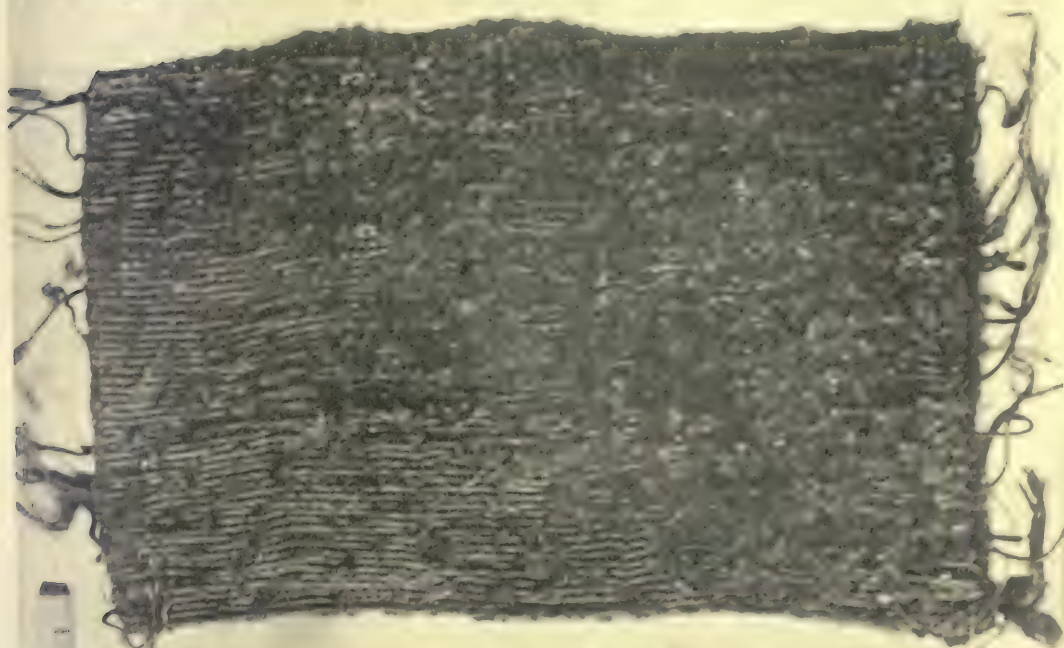
OBJECT OF UNKNOWN USE FROM THE SOLOMON ISLANDS: PROBABLY A "TINDALO" EMBLEM.

(*Miscellanea*, 1900. No. 45.)

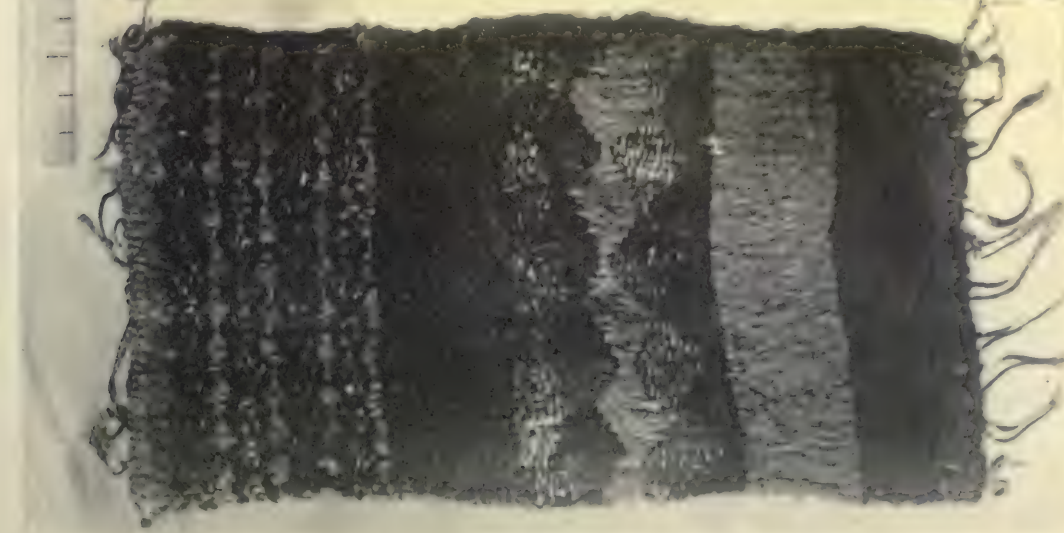
1.



2.



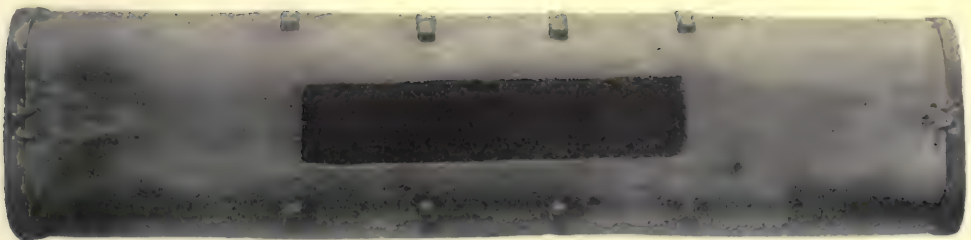
3.



FEATHER MATS IN THE BRITISH MUSEUM.



FIG. 2. LENGTH 41 $\frac{3}{4}$ INCHES.



FEATHERWORK CORONET, AND WOODEN BOX FROM TAHITI.

IN THE BRITISH MUSEUM.

(*Miscellanea* 1901. No. 47.)



HEAD OF SHELL ADZE.
SEEN FROM IN FRONT: SCALE $\frac{2}{3}$ NATURAL.
(*Miscellanea*, 1900. No. 49.)



SHELL ADZE FROM AMBRYM ISLAND,
NEW HEBRIDES.
SIDE VIEW: SCALE $\frac{1}{2}$.

ASIA.

Cyprus : Bibliography.

Cobham.

An Attempt at a Bibliography of Cyprus. By Claude Delaval Cobham, B.C.L., M.A., M.R.A.S., Commissioner of Larnaca. 4th Edition. Nicosia, 1900. 8vo. pp. 55. **62**

Mr. Cobham is to be congratulated both on the necessity which has arisen for a fourth edition of this invaluable little book and on the great pains which he has taken to bring it thoroughly up to date. How greatly the literature of the subject has increased in recent years is shown by the fact that whereas the third edition of the *Bibliography* which appeared in 1894 contained only 497 titles, this of 1900 contains no less than 728. The general bibliography, which occupies 38 pages, is followed by special sections on the numismatics, epigraphy and language, consular reports, newspapers, cartography, and parliamentary papers of the island; and a full chronicle of contributions to the "Cesnola Controversy."

J. L. M.

India: Rajputana States.

Adams.

The Western Rajputana States, a Medico-Topographical and General Account of Marwar, Sirohi, and Jaisalmir, by Lieut.-Colonel Archibald Adams, I.M.S., M.D. **63**
2nd Edition. London: Junior Army and Navy Stores, 1901. 8vo. pp. 455. Price 10s. 6d. Presented by the Author.

The appearance of this book, the work of a medical officer of the Indian Service, who passed through a long period of work in Western Rajputana, was soon followed, we regret to say, by the announcement of the author's death. The primary object of the book seems to have been to discuss the climatic conditions of an out-of-the-way corner of the Indian Empire, and to give some account of his professional work amidst a most interesting people. As it progressed the book developed into a general treatise on the country and its people, including history, geography, natural productions, and social economy. Such a scheme needed qualifications which the writer obviously did not possess. The student of the history and antiquities of Rajputana will be wise in relying on the classical *Annals* of Colonel Tod, for matters social and economic on the *Rajputana Gazetteer* and the Administration and Census Reports, while Jerdon's accounts of the birds and mammals, which are the authorities used by the author, have been superseded by the series of volumes issued under the editorship of Mr. Blanford. Unfortunately, Dr. Adams seems to have had little taste for anthropology, and he lost a unique opportunity of collecting skull measurements and other similar facts, a work which his professional knowledge would have qualified him to undertake.

The book, however, forms a useful collection of facts and seems trustworthy so far as it goes, but to the student of man it will supply little that is novel and interesting, while space has been wasted in recording imperfect notes of superstitions and popular beliefs which are already accessible in other books. The best feature of the volume is the excellent collection of photographs of people, buildings, and scenery with which the volume is lavishly supplied.

W. CROCKE.

Burma :

Ling Roth.

64 *Note on a Hkounng beht set.* Communicated by H. Ling Roth.

In that excellent work *The Burman*, the author, Shway Yeo, states on p. 43 of the 2nd Edition, "These *hkounng beht set* are charmed or consecrated objects let into the flesh under the skin. They are of various kinds. Some are gold, silver or lead; others curious pebbles, pieces of tortoise shell, or bits of horn, all of them with incantations of mystic character written on them. Many famed dacoits have long rows and curves of them over the chest, showing in little knobs through the skin. When they get into English prisons an energetic English jailor has been known to cut them out, lest they should be pieces of gold or silver, or perhaps precious stones with which the turnkeys might be bribed. The usual result is to break the robber's spirit. Once the continuity is interrupted the consecration is gone."



On reading the above passage I wrote to the Burmese Government asking for a specimen of such a talisman, to which request I obtained a very courteous reply from the Hon. C. G. Bayne, Chief Secretary to the Government of Burma, enclosing three specimens, a disc and two pins, together with the following notes:—"These are inserted in the biceps and forearm usually. The needles are simply pushed in, while to insert the disc the skin is pinched up with the thumb and forefinger and punched through with a bit of thick brass wire. The presence of the inserted objects can almost always be easily distinguished and the objects themselves felt, the skin rising up in small ridges in the case of needles and getting discoloured in that of discs. As a rule no injury is caused by the objects miscarrying. If the operation is unsuccessful, the objects drop out and a small scar is left on the skin."

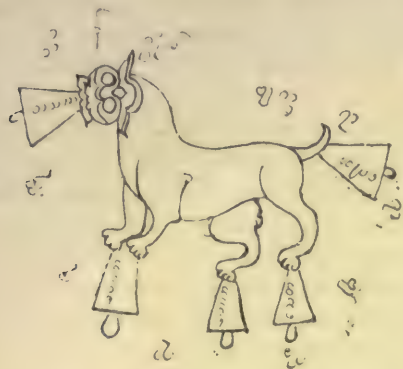
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"The *tsitkay-nekandaw* (deputy) afforded a curious illustration of a custom mentioned by Colonel Yule (*Marco Polo*, vol. ii, 1875, p. 244). The upper part of his cheeks was disfigured by large swellings, caused by the insertion under the skin of lumps of gold, to act as charms to procure invulnerability. Yule mentions the case of a Burmese convict executed at the Andaman Islands, under whose skin gold and silver coins were found. The stones referred to in the text of Marco Polo, as well as the substances mentioned in the note by his learned editor, do not appear to have been jewels. The custom prevails among Yunnan muleteers of concealing precious stones under the skin of the chest and neck, a slit being made, through which the jewel is forced. This, however, is not to preserve the owners' lives, but their portable wealth. While at Mandalay, I examined some men just arrived from Yung-chang, and found individuals with as many as fifteen coins and jewels thus concealed, as a precaution against the robbers who might literally strip them to their skin, without discovering the hidden treasure. But our Burmese official regarded his disfiguring gold as a certain charm against danger."—*Mandalay to Momiën*, London, 1876, pp. 409–10.

Assam: Archæology.

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Aśwagrāntā, near Gauhati. By Capt. P. R. Gurdon, I.S.C. From the *Journ. R. Asiatic Society*, Jan. 1900, pp. 25–7, two plates. Presented by the Author.

65

This interesting sanctuary lies on the north side of the Brahmaputra, a little to the west of the island of Umananda, not far from the old town of Pragjotishpur or Gauhati. Its name (*Aśwa*, "horse"; *grāntā*, "passed by") marks it as a point on the route of Krishna when he carried off his bride Rukminī; and the "footprints of Krishna's horses" are shown, in holes in the rock near the shrine.

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J. L. M.

Burma :

Ling Roth.

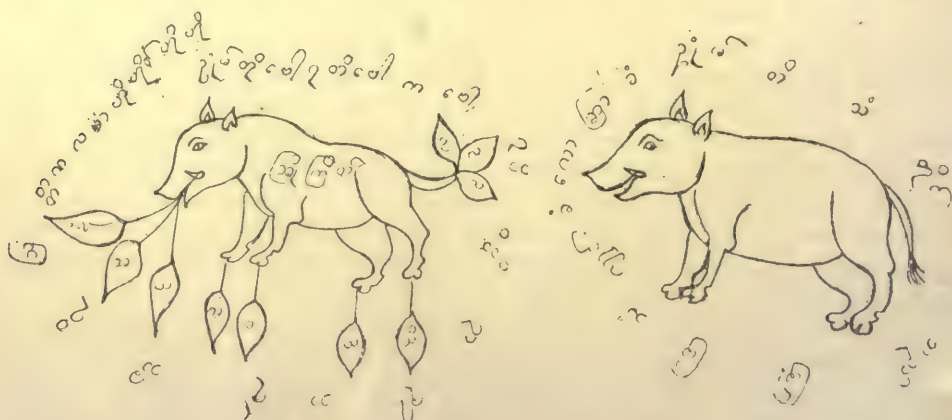
64 *Note on a Hkounng beht set.* Communicated by H. Ling Roth.

In that excellent work *The Burman*, the author, Shway Yeo, states on p. 43 of the 2nd Edition, "These *hkounng beht set* are charmed or consecrated objects let into the flesh under the skin. They are of various kinds. Some are gold, silver or lead; others curious pebbles, pieces of tortoise shell, or bits of horn, all of them with incantations of mystic character written on them. Many famed dacoits have long rows and curves of them over the chest, showing in little knobs through the skin. When they get into English prisons an energetic English jailor has been known to cut them out, lest they should be pieces of gold or silver, or perhaps precious stones with which the turnkeys might be bribed. The usual result is to break the robber's spirit. Once the continuity is interrupted the consecration is gone."



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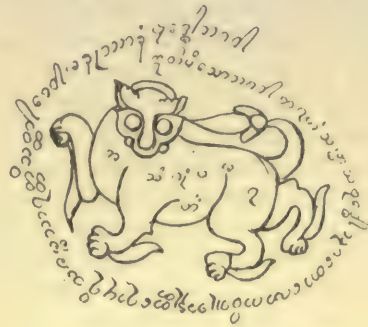
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Japan: Religion.

Aston.

69 *The Japanese Gohei and the Ainu Inao.* Communicated by W. G. Aston to the Anthropological Section of the British Association for the Advancement of Science. Bradford, September 7th, 1900. [To be published in full in this *Journal*.]

This paper illustrates a principle in the history of religion by which the object, which is at first simply an offering, has a tendency to become conceived of as the embodiment of the God, or even as a distinct and independent Deity.

In ancient Japan, the offerings to the gods were of the most varied description. Among them were included hemp and bark-fibre, together with cloth made from these materials. In later times there was substituted a small quantity of paper, made of the same bark-fibre, and attached to a wand in the form known to us as *gohei*. With the change of form, the original character of the *gohei* as offerings was forgotten. They were looked upon as receptacles or embodiments of the God, and honour was paid to them accordingly. At festivals, the God descended with the *gohei*, on a certain formula being pronounced by the priest. Hypnotic practitioners also used these objects in their séances, the deity who inspired them in their trances being supposed to enter their body by this channel. There are cases in Japan in which the devotee has gone a step further, and has constituted the object which was originally an offering a distinct and independent deity.

The Ainus of Yezo use in their worship whittled sticks called *inao* which have a general resemblance to an old form of the *gohei* and are no doubt a cheaper substitute for them. The *inao* like the *gohei* are primarily offerings, but in certain cases they receive direct worship as gods, having become, in short, genuine fetishes. Another link between the *inao* and the *gohei* is provided by certain whittled sticks closely resembling *inao* which were in use in Northern Japan a century ago for striking women with, in order to ensure fertility, as at the Roman festival of the *Lupercalia*. Similar sticks, after consecration by the Shinto priests, were formerly used at Kioto to kindle the household fire afresh on the new year, and so avert the possibility of pestilence.

Borneo: Religion.

Hose and McDougall.

70 *Some Peculiar Features of the Animal-cults of the Natives of Sarawak, and their Bearing on the Problems of Totemism.* Communicated by Charles Hose, D.Sc., Resident of the Baram District, and W. McDougall, M.A., to the Anthropological Section of the British Association for the Advancement of Science. Bradford, September 11th, 1900.

We had observed customs that seemed to indicate the existence of a well-developed totemism, either at the present time or in recent times, among the natives of Sarawak. We have therefore collected information bearing on this subject as diligently as possible, from all the tribes with whom we have come into intimate contact.

We found a great number and variety of peculiar rites and customs observed by the people of the different tribes in their dealings with animals and plants. We confine ourselves in this short paper to giving (1) a general account of the customs of one of the inland tribes, the Kenyahs; (2) to describing the *Nyarong*, or spirit-helper of the Sea-Dayaks, and some similar institutions among the other tribes; and (3) to pointing out the bearing of our observations on the totem problem.

The Kenyahs are a warlike agricultural people, living as isolated communities of twenty to fifty or more families, each community inhabiting a single long house built on the river-bank. Their religion is peculiar, in that they believe in a beneficent

Supreme Being and a group of departmental deities, while they attribute to every agent that affects their lives a spirit that must be properly respected and, if necessary, propitiated.

Most important to them of all the animals is the common white-headed hawk. He brings messages of warning and advice from the Supreme Being to those who know how to read the signs he gives, and he is consulted before every undertaking of importance, and sacrifices of fowls and pigs are made to him. A wooden image of the hawk stands before every house. Several other birds give them omens of lesser importance, and none of these may be killed or eaten.

The domestic fowl is killed as a sacrifice to the hawk or other powers, and its blood is sprinkled on the altar-posts of the gods and on the persons taking part in various ceremonies, especially peace-making ceremonies. The domestic pig is sacrificed in much the same way. The spirit of a pig is always charged with some prayer to be carried to the Supreme Being, and the answer is read from the markings of its liver.

The crocodiles are regarded as a friendly and allied tribe, and may be killed in retaliation only. No Kenyah will kill a dog, and the dead body of a dog is regarded with fear.

Kenyahs will not eat the flesh of deer or horned cattle, and there are many restrictions on touching or using any parts of them.

Only old or renowned warriors will wear or touch the skin of a tiger.

One house is decorated with carvings of the gibbon on every large beam, and all Kenyahs have a dread of the Maias and the long-nosed monkey.

There thus seems to be every degree of regard paid to the different beasts, from the mere uneasy feeling in the presence of the uncanny, long-nosed monkey to the elaborate cult of the hawk, and the nature of the respect paid to any species seems in nearly every case to be the direct expression of the impression made on the barbarian's mind by the behaviour of the beasts.

The Spirit-Helper.—Every Sea-Dayak hopes to be guided and helped all through his life by a spirit which announces itself to him in dreams and takes up its abode in some peculiar natural object or in some animal. In the latter case the Dayak will never kill or eat one of the same species of animal, and will lay the same prohibition on all his descendants, so that a whole family may come to pay especial regard to one species of animal for many generations. A similar institution occurs, though less commonly, among the other tribes. In such cases we seem to be able to trace sometimes the actual origin and growth of a totem.

Borneo: Stone Age.

Haddon.

Relics of the Stone Age of Borneo. Communicated by A. C. Haddon, Sc.D., F.R.S., Lecturer on Ethnography in the University of Cambridge, to the Anthropological Section of the British Association for the Advancement of Science. Bradford, September 7th, 1900. 71

Until about eighteen months ago the only authentic example in this country of a stone implement from Sarawak was the specimen collected by A. Hart Everett, which is now in the Pitt-Rivers Collection at Oxford. In December, 1898, the Sarawak Museum obtained a specimen of a different type. I discovered a third type in a Sibop house on the Tinjar River in the Baram District of Sarawak; later Dr. C. Hose, the Resident of the Baram District, obtained numerous examples from various interior tribes in his district; these he has generously presented to the University of Cambridge. The occurrence of stone implements in Borneo has been previously noted.

The implements are made of various rocks, including fibrolite, impure sandstone, arkose, silicified limestone, shale, andesite and chalcedony. The form, too, varies greatly; some are obviously axe heads, others adze blades, while certain cylindrical forms, with a more or less cup-shaped cutting end, were probably used to extract the pith from the sago palm. In the collection are several stones of irregular form; the former use of some of them is problematical, but they have recently been used as touchstones.

The natives have a high regard for these stone implements, which have in their eyes a sacred character, and it is very difficult to persuade their owners to part with them. In all cases fowls had to be sacrificed to appease the spirits. The implements are stored with other sacred objects, and most of them are believed to be teeth, or toe-nails, of Baling Go, the Thunder God.

Borneo: Ethnography.

Haddon.

72 *Houses and Family Life in Sarawak.* Abstract of a paper communicated by A. C. Haddon, Sc.D., F.R.S., to the Anthropological Section of the British Association for the Advancement of Science. Bradford, September 7th, 1900.

The series of nearly fifty lantern slides exhibited by Dr. A. C. Haddon, taken during his recent expedition to Sarawak, were selected to illustrate the type of house that is common among the settled inland tribes of Borneo, and the every-day life of the people. No attempt was made to distinguish between the various tribes, as their mode of life is very similar in its main features. The villages are all situated on or close to the banks of rivers; most of the houses are of large size, and many contain from half-a-dozen to sixty families; sometimes a village consists of a single house or of a string of houses placed endwise to each other.

A house is built on piles some 10 to 20 feet from the ground. Along the side facing the river is a wide verandah which stretches down the whole length of the house; here many domestic industries are carried on, and all the social and public business is transacted. The dwelling-rooms of each family open by a single door on to the verandah. While the common verandah affords every facility for social intercourse, the privacy of the house is thoroughly respected.

In the verandah of nearly every house is at least one trophy of the skulls of enemies, which are supposed to bring good luck and plenteous harvests; food is occasionally offered to them and a fire has to be kept burning beneath them, otherwise the skulls would be uncomfortable and bring misfortunes to the house. Various industries were illustrated by slides, such as the husking and winnowing of rice by the women. The houses are often ornamented with carvings or painting of a conventional character, the style of decoration varying according to the tribe.

Borneo: Textiles.

Haddon.

73 *The Textile Patterns of the Sea-Dayaks.* Communicated by A. C. Haddon, Sc.D., F.R.S., to the Anthropological Section of the British Association for the Advancement of Science. Bradford, September 7th, 1900.

The Sea-Dayak women weave short cotton rep petticoats and cotton sleeping wraps which are covered with beautiful and often intricate patterns. The patterns are made in the following manner: the warp is stretched on a frame, the woman takes the first fifteen to thirty strands and ties them tightly with strips of leaves at irregular intervals, according to the design, which she carries in her memory. The next fifteen to thirty strands are similarly tied, and this process is repeated until all the threads have been utilised. The warp is then removed from the frame and dipped in a

reddish dye, which colours the free portions of the warp, but the tied-up portions remain undyed; thus a light pattern is left on a coloured background, when the lashing is untied. If a three-colour design is required, as is usually the case, the first lashing is retained, and various portions of the previously dyed warp are tied up; the whole is immersed in a black dye, and then both sets of lashing are untied. The pattern is thus entirely produced in the warp, the woof is self-coloured, and does not obtrude itself in the material.

There are a very large number of designs and patterns, which are remembered by the women and handed down from mother to daughter. By far the greater number of these designs are based upon animals, whereas most of the patterns carved by the men on wooden and bamboo objects are derived from plant motives. The designs embroidered by the women on jackets and loin-cloths are usually zoomorphic in character, but the treatment of the motives is quite different from the decoration of previously described fabrics.

The decorative art of the Sea-Dayaks of Sarawak differs in character from that of the Kayans, Kenyahs, and other inland tribes.

Malay: Ethnography.

Skeat.

Report on Cambridge Exploring Expedition to the Malay Provinces of Lower Siam. Drawn up by W. W. Skeat, and presented to the British Association Committee on the National History and Ethnography of the Malay Peninsula. Bradford, September, 1900. Printed in full in the *Proceedings of the British Association*, 1900 (Bradford). 74

This expedition was organised to carry out a scientific survey, in which Ethnology, Zoology, Botany, and Geology should all have a share, of the little known Malay provinces of Lower Siam, and especially to extend the scope of the ethnographical collections and observations referred to in the Fourteenth Annual Report of the Antiquarian Committee to the Senate (June 6, 1899).

The party comprised Messrs. R. Evans, of Jesus College, Oxford; F. F. Laidlaw, of Trinity College, Cambridge; D. T. Gwynne-Vaughan, of Christ's College, Cambridge; R. H. Yapp, of St. John's College, Cambridge; N. Annandale, of Balliol College, Oxford, and myself.

The inhabitants of these provinces are, for the most part, Malay, but Siamese influence becomes gradually predominant to the northward, and the process of fusion between these two antagonistic elements presents some curious racial problems. But the most interesting subject for investigation in these provinces is perhaps presented by the very primitive jungle tribes of the interior, about whom much valuable information was obtained.

Yet another interesting tribe, of whom no account seems to have yet been published, is the sacred tribe of the Prâms, who claim to have come over from India, and to have established themselves in the country anterior to the coming of the Siamese or Malays. What truth there may be in their statements will (it may be hoped) now be ascertainable, as a copy of their sacred book, containing an account of their origin, was obtained by the expedition.

But the special interest of the territories traversed centres, perhaps, in the fact that they have hitherto formed a species of ethnical breakwater, but little, if at all, affected by the ideas of a higher civilisation. These ideas, however, are already taking root, and many of the manners and customs witnessed by the expedition are becoming obsolescent or are already obsolete.

It is hoped that when the results are known the present expedition will be found

to have achieved results to some extent comparable with those obtained by the important expedition sent by the Dutch Government to Mid-Sumatra in 1877-9. The results obtained should also be of value, for the purposes of comparison, with the results of the very successful Cambridge Anthropological Expedition of Dr. Haddon to the Torres Straits, Sarawak, and New Guinea.

Owing to the uncertainty as to the probable reception which the expedition would experience at the hands of the inhabitants, the good offices of the Siamese Government were bespoken by the Foreign Office; and I have much pleasure in recording the extreme hospitality and enlightened help which the expedition consequently received from the local authorities, in some cases, perhaps, under rather difficult circumstances.

We reached Singora on March 27th, 1899, and were most hospitably entertained in his own house by the High Commissioner, H. E. Phya Sukhum. Next day we proceeded up the Inland Sea. Some dredging was done here by Messrs. Evans and Annandale, and the Bird's Nest Islands were visited, observations made, and photographs taken of the curious cave-dwellings of the island guards.

At Lampan (Lumpumm) a short stay was made by Messrs. Evans and Vaughan, Mr. Annandale and myself proceeding into the interior to try to meet with a small Sakei (jungle) tribe of Pangans who were reported to have been seen in the vicinity, and to photograph some of the Siamese tree-graves, which method of burial, in accordance with instructions from Bangkok, is fast becoming obsolete. A forced march by night on elephants brought us to the spot too late to overtake the wild men, who had moved away, no one could say whither, the night before our arrival. Mr. Annandale was able, however, to photograph their late dwelling-place, which consisted of a cave under a projecting rock, near the summit of a lofty hill. He also took photographs of the tree-graves. These are usually cigar-shaped wrappers, or rather "shells" made of laths, and suspended horizontally at a height of 6 to 8 feet from the ground between two tree-trunks, branches, or posts. The corpse is exposed in one of these shells (the heels being generally left higher than the head), and allowed to decay till the bones are clean, after which the bones should be collected and burnt. Box-like receptacles on posts (as among the Madangs of Borneo), are occasionally substituted for the wrappers. On this journey some strange articles of diet were served up to us, among them being red ants, toads, bee-grubs, and a species of cicada. The manner in which the latter are caught is peculiar. Two or three natives gather at night round a brightly burning wood fire, one of them holding a lighted torch. The others clap their hands at regular intervals, and the cicada, attracted by the noise and guided by the light, fly down and settle upon the people as they stand by the fire. In the Wat (Siamese temple) at Ban Nah Mr. Annandale noticed that one of the small figures of Buddha which had been deposited in the temple as an offering, contained a fossil shell, and this clue, carefully followed up, led to the discovery of the quarry from which the fossil had been taken.

On reaching Lampan we found that Messrs. Evans and Vaughan had proceeded to the "Tälē Noi," or "Little Lake," at the end of the Inland Sea, and followed them accordingly. We did not overtake them, but our visit to the "Little Lake" was of great interest. In one of the local "wats" or temples a human embryo was found among the offerings. We also came upon a small isolated tribe called "Prām" (? Brahm) people, who claimed to be a sacred tribe of Indian origin, and appear to have been hitherto undescribed. They retained several peculiar customs, notably that of burying their dead in a sitting posture, with the top-knot tied to the top of the coffin. A copy of a sacred book, describing the origin of the tribe and the story of

their migration, was obtained with difficulty. It is said to be written in an Indian language, which they themselves no longer understand. Their dress consisted of a white robe, a white shoulder-cloth, and a peculiar white two-peaked turban or cap. Their chiefs claimed that they were the oldest inhabitants of the country, and that they were not constrained to make obeisance even to the sovereign.

After a few days' further stay in Singora, where we rejoined Messrs. Evans and Vaughan, we proceeded to Patani in the commissioner's yacht, arriving after a good passage just in time to witness part of the gorgeous pageantry of a Malay "royal" wedding, between the Raja of Patani's sister and the "Raja Muda" of Kelantan.

On the 28th we left for Bukit Besar, or Negiri (Intragiri), an isolated mountain about 3,000 feet high, on which several days were spent. This was known to the natives as a haunted mountain possessing a pond near the summit, on which are said to grow certain magical shrubs, one of which is believed to be the means of conferring perennial youth on its finder, and another to be one of the most powerful love-charms in the world. These treasures are guarded by a host of demons, and the natives expressed great fear of them until the ascent to our camp (at a height of about 2,000 feet) had been successfully accomplished, after which their fears rapidly subsided. Mr. Evans got his first specimen of *Peripatus* here, and Mr. Vaughan also did well with the mountain flora.

On our return to Patani Messrs. Vaughan, Annandale, and Evans proceeded up the Patani to Biserat in Jalor (Jalâ), which proved an excellent collecting ground. I stayed at Patani for some days longer, and visited the very extensive salt pans near the river mouth, the Patani potteries, and the grave and shrine of the celebrated local saint of Cape Patani, about all of which much information was gained. Of the latter many miracles are told, and his grave-posts (at the head and foot) are still believed to make prophetic movements, one instance of which I was enabled to test on the spot. Two very curious rods, such as are used in divination, were here obtained.

On the 26th I rejoined the rest of the party at Biserat, and then visited the magnificent limestone caves, a very complete collection of whose fauna was made by Mr. Annandale. These caves included the fine Gûa Gambar, or Statue Cave, which contains a recumbent figure of Buddha, nearly 100 feet long, as well as a number of other statues in a sitting posture. Extensive zoological and botanical collections were also made at Biserat by Messrs. Evans and Vaughan. An exhibition of devil dancing was here witnessed.

Small-pox having now set in badly and two deaths occurring in the village, collecting became more difficult, and presently the Raja and his household retired to the hills, and many houses were closed by means of a rattan carried round outside the fence of the compound, whilst slipknots of jungle-grass (*lalang*) were hung across the gate, and a couple of stems of a bitter-tasting tree, called the Bedara Pahit, buried cross-wise on the threshold.

One of the annual ceremonies for the purification of a village was here witnessed, and many ethnological specimens and much information obtained. On June 6 Mr. Evans fell ill, and as he took long to recover, Messrs. Annandale and Vaughan proceeded to Kota Bharu, in Raman, whilst Mr. Evans and I went down to the coast.

After spending a few days at Patani, we went to Jamba in Jering. Here, too, I witnessed the annual ceremony for the purification of the village, at which the launching of a spirit-boat, about a yard and a half long, formed the chief feature.

Before leaving Jambu I paid a flying visit to Teluban. On returning to Patani we were rejoined by Messrs. Vaughan and Annandale, and proceeded by the overland route through Raman Lige and Ulu Kelantan, and up the Lebih, a tributary of which stream, the Aring, takes its rise in the neighbourhood of the Taban Mountain, which it was one of the objects of the expedition, if practicable, to ascend. The expedition therefore started from Biserat on July 6, and proceeded to Kota Bharu, the chief town of Raman. . . . Mr. Laidlaw accompanied me up the Aring river, and there took photographs and full measurements of several persons belonging to the wild tribes, while a good deal of information about their manners and customs, as well as a vocabulary of nearly 600 words, were collected by myself.

On our return, we all descended the Lebih on rafts, as far as its juncture with the Kelantan river, and thence descended the latter as far as Kota Bharu, the capital of the important East Coast State of Kelantan, and the seat of its Raja.

On the way down the river we measured and photographed several more Sakeis. At Kota Bharu Messrs. Laidlaw and I stayed for about a month, Messrs. Yapp and Evans proceeding to Trengganu, in order to pay a short visit to the coral islands off that coast.

Much important ethnological work was done at Kota Bharu. Investigations were conducted into Malay methods of industry, and a devil-dancing performance was witnessed by Mr. Laidlaw and myself, at which the name of the winning bull at a coming bull fight was correctly prophesied. Full anthropological measurements were taken by Mr. Laidlaw of ten or twelve Kelantan Malays, notes made of the colour of their skin, eyes, hair, etc., and experiments made as to their colour vision. Measurements were also taken of at least ten of the Trengganu Malays, and full observations recorded.

At Trengganu my investigation of Malay industries was continued and much useful information obtained. The most interesting was, perhaps, the method of manufacturing damasked krisses—the details of which were carefully studied.

On leaving Trengganu, we proceeded to Singapore, where a few days were spent, and a visit paid to one of the villages of the "Orang Laut" (the old piratical stock of sea-gypsies, who were once the terror of the Straits, and who were found by Sir Stamford Raffles living in their boats round about the island of Singapore, when it was proclaimed a British Colony).

By the first available steamer we proceeded to Penang. . . . As soon as I was able to go up country, I proceeded to Kedah, and there, after a short excursion up the coast to Satal and Perlis, made two expeditions into the Sakei country, near the headwaters of the Muda. Here I had the good fortune to find a tribe of from twenty to thirty individuals living in a long barrack-like shelter of palm-leaves. From them, and from a neighbouring tribe, I obtained much valuable information as to their manners, customs, and language, as well as full measurements of a few individuals, and some probably unique phonographic records of their songs, which are of an extremely simple and primitive character. I also, with difficulty, procured the skeleton of an adult male. In all the States visited by me, investigations were made into the leading Malay industries, and much valuable material bearing on this subject was collected. Wherever possible, statistics were obtained showing the extent and nature of the development of trade and the stage of civilisation which had been reached by the people. Many of the leading Malay industries, such as that of weaving, are being rapidly modified by the introduction of European methods and appliances, and it is now the rarest and most difficult thing to obtain cloth actually made of

homespun thread, the use of Singapore silk and aniline dyes being already almost everywhere the fashion.

In addition to the above, the departments of ethnology studied included religious and medical ceremonies, children's games, legends, languages and dialects, under each of which headings a mass of material was collected.

Malay: Physical Anthropology.

Laidlaw: Duckworth.

Notes on the Anthropological Observations made by Mr. F. Laidlaw in the course of the Skeat Expedition to the Malay Peninsula. Communicated by W. H. L. Duckworth, M.A., Lecturer on Anthropology in the University of Cambridge, to the Anthropological Section of the British Association for the Advancement of Science. Bradford, September 11th, 1900. 75

The anthropological results of the Skeat Expedition comprise museum specimens in the form of a skeleton of a native of the Pangan tribe (Kedah), of samples of native hair, and also a collection of measurements by Mr. Laidlaw.

The skeleton is that of an adult male, whose stature was distinctly small (about 5 feet); the skull presents a combination of features commonly found in the skulls of negroes, with those which characterise the crania of infants; the whole constituting evidence of the lowly physical type of the individual. The bones of his skeleton show signs of widespread disease, possibly of a congenital nature. Mr. Laidlaw's measurements and observations relate to members of the same tribe, and are to be welcomed as affording precise information about a race of Malayan aborigines hitherto little investigated. Perhaps the most interesting point to notice is the small average stature of the Pangans (about 5 feet for adult men); though dwarfish, they are, however, markedly taller than the African dwarfs. It is also noteworthy that differences in the colour of the skin (varying shades of dark brown), and in the character of the hair, occur in the different tribes. It is important to notice that they present comparatively few anatomical features which can be claimed as evidence of an approximation to the ape. However primitive in their mode of life, they are anatomically truly terrestrial and human.

The present communication is only a preliminary account of Mr. Laidlaw's results; moreover there is much information available through the efforts of the Skeat Expedition regarding the mode of life, language, customs, and religious beliefs of these fast disappearing aborigines. The British Association is, therefore, to be congratulated on having assisted materially, by contributing to the Skeat Expedition, in rescuing these records of the Pangan tribe of the Malay Peninsula.

Malay Peninsula: Magic.

Skeat.

Malay Magic: Being an Introduction to the Folklore and Popular Religion of the Malay Peninsula. By W. W. Skeat, with a Preface by C. O. Blagden. London: Macmillan and Co., 1900. pp. 1-685, with 41 illustrations. 21s. net. Presented by the Publishers. 76

Mr. Skeat has performed a great service to students of comparative customs and religion by the publication of this book, which contains a large amount of original matter as well as quotations from the writings of other trustworthy observers. The author has done well to reprint these, as it saves other workers an immense amount of time and trouble in hunting up references in publications which are often difficult of access, and at the same time, one feels that the excerpts have received the additional authority of Mr. Skeat, for if he had not considered them reliable, he would

not have quoted them. It is sometimes urged that because certain customs or beliefs are similar to those in adjacent countries, or even in far-off lands, there is no need to reproduce them; this is a very unscientific position. In all branches of science a vast amount of tedious and apparently unprofitable work has to be done before generalisation can be safely made, and we should offer our hearty thanks to original investigators like Mr. Skeat, who are content to laboriously collect and sift information, and then to publish it in a straightforward manner, enriched with local knowledge and unvitiated by strivings to support original or other theories. The critical labour which Mr. Blagden has expended in seeing the work through the press also deserves our warm thanks.

A few more explanatory notes might have been offered; for example, the reason why bamboo shoots were tabooed to Princess Rimbout (p. 152) was because the caltrops that previously wounded her were made of bamboo. It is a pity the word "armadillo" should have been used on p. 154, as that name should be confined to the South American edentate.

The book begins with creation-myths, both of the world and of man; not only have human beings souls, but so have natural objects as well. Usually the soul resembles the body, but the soul of the eagle-wood is thought to take the shape of a bird, the soul of tin-ore that of a buffalo. We naturally pass on to the magician or individual accredited with supernatural powers, who can deal directly with the souls or essences of men and bodies on the one hand, and with the unseen powers on the other. Mr. Skeat makes the suggestive statement that "the evidence of folk-lore, taken in conjunction with that supplied by charm books and romances, goes to show that the greater gods of the Malay Pantheon, though modified in some respects by Malay ideas, were really borrowed Hindu divinities, and that only the lesser gods and spirits are native to the Malay religious system." The influence of Islamism is also very apparent, and many undoubtedly Malay pagan charms terminate with the Islam formula.

A large series of magic rites and formulæ are given in connection with the wind and weather, animals, vegetation, and minerals, water, fishing, and fire. The life of man is hedged in with magical rites, and we learn from Mr. Skeat what has to be done at birth, adolescence, betrothal, marriage and death. Most of the illustrations are from specimens in the splendid collection that Mr. Skeat presented three years ago to the Cambridge University Museum of Archæology and Ethnology. A. C. H.

Malay Kris.

Louis.

77 *The "Kingfisher" type of Kris.* Communicated by Professor H. Louis, M.A., to the Anthropological Section of the British Association for the Advancement of Science. Bradford, September 10th, 1900. (With Plate I-J.)

This paper described a peculiar pattern of *Kris*, which is used in a limited area in the north-east of the Malay Peninsula. The Malay legend of its origin is that a party of Malays from the Bugis Islands invaded that portion of the Peninsula many centuries ago. One of their leaders was known as "the Kingfisher," presumably on account of his rapid movements. The invasion was successful, but the leader fell in one of the last engagements, and after his death his followers carved their *kris*-handles into shapes resembling the Kingfisher's head and beak. Under Chinese influence the pattern became more and more ornate, until it reached the present fixed type.

The writer discovered in a pawnshop in Bangkok an earlier form of this type,



FRONT VIEW.



BACK VIEW.

(*Miscellanea*, 1901. No. 61.)



HANDLE OF "KINGFISHER" KRISS.



HANDLE OF "KINGFISHER" KRISS,
OLD PATTERN.

(*Miscellanea*, 1901. No. 77.)

possibly the only one extant. This *kris* seems to have been sold by a Malay in this region, many of whom are well known to have been deported by the Siamese between the years 1790 and 1820; colonies of their descendants still exist in Siam, and have been visited by the writer. The early type of "Kingfisher" *kris* is much more like the bird's head than the modern pattern, which is, however, the only one seen among or known to the Malays. The region in question has rarely been visited by Europeans.

Malay Metal-work.

Rosenhain.

Notes on Malay Metal-work. Communicated by Walter Rosenhain, B.A., to the Anthropological Section of the British Association for the Advancement of Science, Bradford, Sept. 10th, 1900. [To be printed in full in this *Journal*, vol. xxxi.] **78**

The paper dealt with some specimens of Malay metal-work submitted to the author for microscopic and other examination by Mr. W. W. Skeat. Some Malay processes actually witnessed by Mr. Skeat were described, and the bearings of the microscopic examination on the explanations of these processes were discussed.

The first question dealt with was the production of the "damask" pattern on a Malay kris. Microphotographs were given showing that the "damask iron" really consists of layers of loosely welded wrought iron, the only other metal used being tool steel. The body of the blade is made of steel, and a layer of laminated "damask iron" is welded upon either side of the central layer of steel; a thin layer of steel is welded on outside the "damask iron." The author believes that the striated "damask" effect is due to the opening of the loose welds in the damask iron during the forging of the blade, steel being driven between the laminae. The outside layer of steel is entirely ground away, and when the compound surface so produced is "etched" by the pickling process employed, the more readily corroded steel is attacked, leaving the edges of the layers of iron as a series of narrow projecting ridges.

The tools of the Malay goldsmith were next described, and the micro-structure and composition of Malay bronzes and "white metal" were described and discussed.

The final section of the paper dealt with the Malay method of producing chains by casting.

Language: Theory of Grammar.

Temple.

A Theory of Universal Grammar, as applied to a Group of Savage Languages. By Colonel R. C. Temple, C.I.E. (*Jour. Roy. Asiatic Society*, July, 1899, 8vo.) **79**
Presented by the Author.

This little pamphlet of forty pages is described by its author as an attempt to formulate a general theory of grammar upon logical principles, in which reference to the terms and conceptions of the ordinary inflectional languages of modern Europe should be abandoned. Describers of new languages are very rarely found to have the courage to break away from the trammels of the classical or modern systems of arrangement and nomenclature, and follow the natural structure and development of the language discussed. The difficulties are acknowledged, and many expedients invented to bring them into line with the totally different model, and native methods of thought and expression are thereby obscured.

To the student of those languages, therefore, which do not come within the view of the classical scholar, and to those who find an interest in the uncultivated and

therefore undistorted languages of savage peoples, Colonel Temple's theory will be most welcome as the suggestion of a new method of description, and will be found well worthy careful examination. The author has illustrated his general theory by the particular example of the South Andaman group of languages, but it is manifest that its proper exhibition requires examples in various unrelated and morphologically different languages. It is impossible within the limits of a short review to adequately discuss Colonel Temple's argument, and the reader is accordingly referred to the work itself for details. In the earlier portion the author, taking the sentence as the unit of language, discusses its composition and method of indicating purpose, and also the method of expressing the inter-relation of words in a sentence. This leads him to the definition of a series of terms in harmony with his analysis of the sentence, these terms to take the place of the old so-called parts of speech. Colonel Temple's terms are:—1. *Integers*, words which are complete sentences; 2. *Indicators* of subjects or complements of subjects; 3. *Explicators* of subject or complement. 4. *Predicators*, indicating the predicate; 5. *Illustrators* of predicate, complement, or explicator; 6. *Connectors* of the internal components of the sentence; 7. *Introducers*, explaining the purpose of a sentence; 8. *Referent Conjunctions* joining connected sentences; 9. *Referent Substitutes* representing in a subordinate sentence the word to which it refers in the principal sentence. These terms take the places respectively of 1. Imperatives or interjections; 2. Nouns; 3. Adjectives; 4. Verbs; 5. Adverbs; 6. Prepositions; 7. Certain adverbial conjunctions; 8. Conjunctions; 9. Pronouns.

The author then proceeds to discuss the functions of words as indicated by their form. The stem of a word may be simple, consisting only of the root, or be modified by radical affixes to form a compound stem. Qualitative affixes indicate the function of the word and the class to which it belongs, and they may be prefixed, infixes or suffixed, either separably or inseparably. The author has not discussed inflection with regard to its influence on affixes, and additions would possibly have to be made to this section of the theory upon a consideration of some American languages.

The final section discusses the classes of languages as shown by their variation in forms of words, position of words in the sentence, or a combination of form and position. Colonel Temple's principles of classification are as follows:—

1. Syntactical Languages. (Position of words indicate meaning.)
2. Formative Languages. (Forms indicate meaning.)
 - a. Agglutinative. (Affixes without alteration.)
 1. Pre-mutative. (With Prefix.)
 2. Intro-mutative. (With Infix.)
 3. Post-mutative. (With Suffix.)
 - b. Synthetic. (Affixes with alteration.)
 1. Pre-mutative.
 2. Intro-mutative.
 3. Post-mutative.

This outline of a theory is worthy of much expansion chiefly with regard to its application to languages of various forms. The present writer attempted to test it by means of the analysis of parallel sentences in fourteen languages of widely different types. The inclusion of these would have rendered this notice too long, but a general conclusion was arrived at that the theory is adequate for the explanation of all of them.

SIDNEY H. RAY.

EUROPE.

England: Palæolithic.

Bell.

On the occurrence of Flint Implements of Palæolithic type on an Old Land-surface in Oxfordshire, near Wolvercote and Pear-tree Hill, together with a few Implements of various Plateau Types. Communicated by A. M. Bell, M.A., to the Anthropological Section of the British Association for the Advancement of Science. Bradford, September 12th, 1900.

80

At Wolvercote near Oxford there is a large section of a quaternary river-gravel, which has produced the usual fauna, *elephas primigenius*, etc., and many fine implements of human workmanship. This gravel cuts into, and is consequently newer than, a previous land-surface. A portion of this surface is found at Wolvercote, and another portion at Pear-tree Hill, about half a mile distant.

In both places flints, implements of palæolithic types, together with bulbed flakes, and a few implements of plateau type have been found. In every case the flints are ochreous, which distinguishes them from those which belong to the river-gravel at Wolvercote.

The older surface has been previously described as Northern Drift. It is supposed by the author to be a *remaniement* of the true Northern Drift, but to have been deposited under semi-frozen conditions. It must be anterior to the river valley, and consequently its relics of man are the oldest as yet obtained from the Thames Valley.

The drift in question most resembles the drifts of Caddington described by Mr. G. Worthington Smith, and some sections on the Lower Greensand near Limpsfield. Both of these drifts are implementiferous, and the author would correlate the Wolvercote and Pear-tree Hill surface with these drifts.

England: Roman.

Silchester Excavation Fund.

The Tenth Report of the Executive Committee of the Silchester Excavation Fund states that the excavations at Silchester in 1899 were begun on 5th May, and continued, with the usual break during the harvest, until 16th November.

81

The examination of the south-west quarter of the town having been completed in 1898, it was resolved to continue the excavation of the northern half of the site. To suit the convenience of the tenant, the operations of 1899 were restricted to the *insula* (XXI) east of *insula* I (which was excavated in 1890-1) and to another *insula* (XXII) north of XXI, extending nearly as far as the town wall. The total area examined was about $5\frac{1}{2}$ acres.

Insula XXI appears to have been enclosed by walls on all four sides. In addition to two houses occupying the northern corners, it had on its eastern side a large house of the courtyard type, with another small house to the south of it. At the south-east angle of the *insula* was situated an oblong chamber with an apsidal end, perhaps the meeting-room of some trade guild. Other traces of buildings were found along the south side. The south-west angle unfortunately underlies the modern roadway through the city, and could only partly be examined. The western side contained two small square structures. With regard to the houses, that at the north-west corner was discovered in 1864, by the Rev. J. G. Joyce, who communicated an account of it to *Archæologia*. It was, however, only partly excavated by him, and additional chambers have now been found on the south and east. The north-east house is one of the corridor type that has become a courtyard house by later additions. In one of the

added rooms was a hypocaust of peculiar plan. The large house on the east side is of interest from the several changes it has undergone, as well as on account of the traces of a series of mosaic pavements of simple character. The small house to the south is remarkable for the number of pits and wells found beneath it. From these were extracted several whole vases, some of an early type and excellent design.

Insula XXII, though equal in size to the other, contained a large amount of open ground in the centre and north-west. As there were no signs of a street on its eastern side, the portion excavated may form part of a larger *insula*. Near the south-west angle was a good-sized house of the corridor type, with a large chamber at one end terminating in an apse, which had a hypocaust beneath it. A square chamber of some size which had been added on one side has foundations of huge blocks of ironstone, and the same material has been used in what appears to have been a reconstruction of the western part of the house. Besides this house, portions of three others were found. Two of these were of very little interest. The remains of the third include a square block subdivided into two chambers of unequal size, with an apse attached to one side. All these had been warmed by hypocausts.

As usual, a number of wells were met with, lined with wooden framing towards the bottom. No architectural remains of any importance were met with save a piece of coping, part of a fluted Purbeck marble pilaster, and a fragment of a white marble slab. The finds in bronze, iron, glass, and bone were as numerous as usual, but do not call for special notice. From the pits examined an exceptionally large number of entire vessels of pottery were recovered, the total being about eighty. They include several pseudo-Samian vases of unusual quality, an inscribed drinking cup of Castor ware, and some large vessels of the coarse ware which is so seldom found entire. The coins found were not very numerous.

A detailed account of all the discoveries was laid before the Society of Antiquaries on 3rd May, 1900, and will be published in *Archæologia*; and a special exhibition of the antiquities, etc., found, was held as in former years, at Burlington House, in July.

The Committee propose, during the current year, to excavate the large area north of *insulae* I and IX, which extends up to the north gate, and therefore issue an appeal for the necessary funds. The Honorary Treasurer of the Excavation Fund, F. G. Hilton Price, Esq. (17, Collingham Gardens, South Kensington), or the Honorary Secretary, W. H. St. John Hope, Esq. (Burlington House, W.), will be glad to receive further subscriptions and donations.

England: Mediæval.

Armitage.

82 *On some Yorkshire Earthworks.* Communicated by Mrs. Armitage to the Anthropological Section of the British Association for the Advancement of Science. Bradford, September 12th, 1900.

The paper describes a particular kind of earthwork, very common in Yorkshire and in other parts of England, consisting of a moated hillock with a banked and moated court attached. This type of fort has been attributed in turn to the Britons, Romans, Saxons and Danes, with equal improbability. The theory most general at present is that it is Saxon. But Saxon strongholds were built to shelter all the people of the neighbourhood, and were therefore of large area, while these earthworks are evidently intended to protect some individual chieftain and his personal following, as is shown by their small area. There is positive evidence that the Normans built earthworks of this kind in the eleventh century, as the bases of wooden castles, and these moated hillocks are still very numerous in Normandy. They are called *mottes*

in Norman-French, and this word is found in various parts of England in the form *mote*. An inquiry into the castles known to have been built by the Normans when they first came to England shows that almost all these castles had mottes, while the *burhs* or *boroughs* built by the Saxons never have these appendages, unless a Norman castle-builder has been at work there. The recognition of the Norman origin of these castles would help to solve an historical puzzle, how the Normans were able to hold England down. It was by a system of small fortified posts scattered all over the country that the action of the central machinery was carried into the remotest parts of the kingdom.

England: Physical Type.

Beddoe.

On the Anthropology of West Yorkshire. Communicated by John Beddoe, M.D., LL.D., F.R.S., to the Anthropological Section of the British Association for the Advancement of Science, Bradford, September 8th, 1900.

83

Five-and-twenty years ago, when I had the honour of holding the seat now so worthily occupied by Professor Rhys, I took for the subject of my address the Anthropology of Yorkshire. That address was based on the labours of sundry willing and friendly co-operators, as well as on my personal observations; but I fear that since that time but little has been added to our material, except by the discoveries of Canon Greenwell and Mr. Mortimer, of Driffild, in the domain of prehistoric archæology and craniology, and by the observations of our lamented friend, Pitt-Rivers, on the fishermen of Flambro'. At all events, little or nothing of the sort has come to my knowledge; though I am not oblivious of such writers on conterminous subjects as Raine and Atkinson.

Why is this so? The most striking qualities of typical Englishmen have been thought to be strongly developed in Yorkshire. Among these, I fear, is the defect of imagination so often found in those who call themselves, with some pride, practical men. Such men entertain a positive dislike and even contempt for knowledge of which they don't see the immediate use; and they cannot be expected to help in the gathering thereof.

This character is not British, Celtic, Welsh. Yet it is often said that the old British element is strong north of the Humber. Let us enquire into the grounds of this belief.

Among them are the retention of such names for territorial divisions as Deifyr and Bryneich, Loidis and Elmet. But even Kent, Saxon or Jutish as it is, keeps its Keltic name. And when we come to river-names—I speak under correction of and in presence of a Keltic philologist; but may not Swale and Skell and Nid be Teutonic, as well as Greta and Hull.

Any argument for the potency of the British element derivable from the Northumbrian laws and were-gylts seems to me but weak. The Welshmen for whom provision was made may well have been the subjected but not amalgamated Britons beyond the Western mountains, the Cumbrians and Lancashire men. They might be murdered at a reasonably cheap rate; but such was not the case with the ordinary churl, as it would probably have been if his descent had been recognised as British. Some have laid stress on the curious word "wallerwents," and have thought it signified Welshmen of some kind. Thirty-six wallerwents were summoned as compurgators or jurymen in certain cases. But it is very unlikely that thirty-six Welshmen, or indeed any Welshmen, could or would have had submitted to them disputes between members of the dominant race. Mr. Coote's ingenious suggestion

seems to me more probable. He thought that "wallerwents" was a corruption of "valore equantes," a Roman legal term importing the peers or equals of the defendant. That would imply some survival of a Latin dialect after the Anglian conquest, which may probably enough have been the case in the city of York; and if a dialect survived, *à fortiori*, the population who spoke it did so.

The Keltic rhyming scores in use among the shepherds of some parts of Northumbria; the fact proves nothing more than what is certain on other grounds, viz., the survival of a portion of the servile class during and after the Anglian conquest.

As for the evidence of dialect, a certain number of Keltic words remain in the dialect of Craven, but I think that in the lower valleys of the Aire and Wharfe such words are as infrequent as in other parts of England. How this may be in the south-western valleys I am unable to form an opinion. The dialect of the West Riding generally was set down by Prince Louis Lucien Bonaparte as intermediate between the Midland English and the true northern or Yorkshire of the East and North Riding, and was classified as nearer to the Nottinghamshire, Derbyshire and South Lancashire speech than to that of the other Ridings. I confess that my own opinion on this point would be different, if I could venture to form one; but if we accept the Prince's authority, we must take it to indicate, if anything, a greater potency of the Anglian, and a less one of the Scandinavian element, in the West Riding.

Of the cranial forms and facial features of the ancient inhabitants of the West Riding we really know very little. Thanks to Greenwell and Mortimer in the East Riding, and to Bateman and Davis and Thurnam in Derbyshire, we know that in both those districts there was the usual succession of longheaded stone-men, and round, or rather cordiform or wedgeheaded bronze-men, which occurred in other parts of England, though in the East Riding it was not so distinct. Perhaps conditions of soil or climate were somehow adverse, either to the peopling of these western moorlands or to the preservation of their bodily remains; whereas the chalk of the East Riding and the carboniferous limestone formation of Derbyshire were more favourable.

It is sometimes said, on the authority of hatters, that heads are broader in Yorkshire than in other parts of England. But there is not much scientific authority, I believe, for this statement, nothing more than a probability. I have only fifteen Yorkshire heads in my note books, and their average kephalic index is 78.28, that of all my Englishmen being 77.84 only, but fifteen is of course quite an insufficient number. Dr. Venn measured 524 students from the North of England, whose kephalic index, ascertained by a method somewhat different from mine, was 79.18, that of all his pure Englishmen being 78.94. Here Yorkshiremen are not distinguished from other northern men; but it is likely enough that the largeness of the figure is really due to the Yorkshire element.

My own impression, acquired by simple inspection, and fallible accordingly, is that in the central parts of the West Riding, and notably at Leeds, a prevailing type is characterised by an oblong or rather trapezoidal head, inclining to be broad rather than narrow, with a vertical forehead, smooth and not prominent brows, and a straight profile with a straight or sometimes concave nose. The smooth brows dissociate this type from that of the bronze race; and the squareness from the smoothly elliptic or oval one of the southern Saxon. Dr. Von Hölden would class it as Sarmato-Germanic, His and Rutimeyer as Belairian. I am disposed to call it Anglian, partly because of its usual association with a blond complexion, or at least with light hair, though the eyes are often of a muddy grey. Light hair is prevalent, not only hereabout, but in the mountainous regions to the north and south, in Teesdale, for example, and about

the Peak of Derbyshire; and this complicates the problem we have to deal with in the West Riding population. As a general rule, the proportion of light hair seems to be a pretty fair criterion of that of Saxon, Anglian, or Scandinavian blood; but here we have districts where we might reasonably expect to find the posterity of refugees of primitive races, rather than of conquering tribes or other comparatively recent immigrants. The anomaly of Teesdale may, however, be explained: the whole of Teesdale, down to Barforth and Cliffe, is returned in Domesday as waste, and the very blond population which now inhabits it must descend from subsequent immigrants. If such and so thorough was the result of the ravages of William the Conqueror and Malcolm Canmore, why may not those of Ethelfrid Fleisawr and Edwin have been equally effective? Bede indeed distinctly tells us that Ethelfrid exterminated the native inhabitants of some of his conquests, so as to render them habitable by the English. Why may not this have been the fate of the people of Loidis and Elmet? "Exterminated" does not necessarily mean slaughtered, but rather "turned out," "expelled"; and the surviving Welshmen would probably "trek" across the mountains into Lancashire.

This is the explanation to which I incline; but there are two others from which to choose. The phenomena may be the result of the action of "media," of surroundings, of a cold raw climate acting through natural selection. Or it may be that the Brigantes were really a fair race, perhaps of that late Gallic immigration which followed the bronze period, and to which some of Mr. Mortimer's crania may perhaps belong, but of which cremation has deprived us of many traces. The true bronze race is generally thought to have been fair or reddish; but though individuals who reproduce its type occur hereabout, I don't think they are frequent: they should combine the broad head with strong prominent brows and nose, like the noble savage of Gristhorpe, who now adorns either the York or the Scarborough Museum.

On the whole, I think the eastern and central regions of Yorkshire, judging by physique, less purely Teutonic than Teesdale or the Wapentake of Morley, though more so than Craven. The eastern men, at Beverley, Driffield, Whitby, Thirsk, Malton, seem to me more mingled and less typical, more like other Englishmen than these in the west. There is doubtless less French immigration hither after the devastations of the Conqueror than into the east, which had suffered much more severely; and perhaps some survivors of the massacre and famine found refuge here among their kin. Certainly many Anglian and Danish gentlemen remained on Ilbert de Lacy's huge estate, holding what had been their own lands under his easy and generous rule; and they were the progenitors of many mediæval knights and squires. Thus, for example, the families of Elland and Quarmbury, actors in the sanguinary Elland Vendetta, in the fourteenth century, were of Anglian or Anglo-Danish pedigree, descendants of Gamel and of Orm. And, probably, the mass of the population was of the same racial character. So far as I know, it has undergone no material change in that respect since those days. Certain Flemings or Frisians may have settled in Halifax and elsewhere; but if my view is correct, they could not much alter the physical type, for they were near cousins of the people among whom they mingled. But in our own times changes are going on pretty rapidly, owing to the greater facility of migration. And this leads me, in conclusion, once more to beg for local assistance in solving two at least of the problems I have been discussing. One of these is historical. How were the voids created by the ravages of the eleventh century filled up? I may remind you, as I recollect doing five-and-twenty years ago, that the side of this great and opulent and populous city was stated by the authors of Domesday Book to be then waste, desolate and valueless.

The second is somatological. What are the prevailing physical types, especially as to form of head, among modern West Ridingers? I am not going to exaggerate the importance of such questions; but if the latter one is at all worthy of being studied and answered, it should be studied and answered at once, before the population becomes so mixed as to lose or confuse its characteristic features.

Scotland: Physical Type.

Gray and Tocher.

84 *The Physical Characteristics of the Population of West Aberdeenshire.* Communicated by J. Gray, B.Sc., and J. F. Tocher, F.I.C., to the Anthropological Section of the British Association for the Advancement of Science, Bradford, September 12th, 1900. [Compare the previous paper of the same authors, in this *Journal*, vol. xxx, p. 104.]

These observations were taken at the Lonach gathering, in Strathdon, a district right at the head of the valley of the Don. The district is comparatively isolated, the nearest railway station being over 12 miles distant.

Our principal object was to ascertain what difference, if any, existed between the people in the upper ends of the river valleys and the people on the eastern seaboard, the anthropological statistics of which have been recently ascertained. The following results show that a very considerable difference exists; and, it being highly probable that a more primitive stratum of the population is always to be found in the upper ends of river valleys, the results are of great interest from this point of view.

The pigmentation and nose statistics of the whole of the people attending the gathering, namely 361 males and 243 females, were taken at the gate by two observers. Later on, the same statistics, with the addition of measurements of the head and of stature, were taken in a tent in the grounds, about 90 adult males, natives of the district, being measured. The people observed at the gate contained a small percentage of visitors from a distance, which may account for the difference in the results obtained at the gate and in the tent:—

	HAIR.				EYES.			TYPES OF NOSES.				
	Fair.	Red.	Brown.	Dark.	Light.	Medium.	Dark.	Straight.	Roman.	Wavy.	Concave.	Jew.
MALES—												
W. Aberdeenshire (gate)	10	8	42	40	37	48	14	79	15	3	2	1
" " (tent)	5	8	40	47	38	45	17	56	22	13	6	3
E. Aberdeenshire (gate)	9	6	66	19	26	51	23	56	17	7	17	3
" " (tent)	18	2	40	40	35	46	19	66	20	8	4	1
FEMALES—												
W. Aberdeenshire (gate)	8	6	36	50	39	34	27	82	9	2	6	1
E. Aberdeenshire (gate)	10	6	55	29	22	39	39	60	7	5	27	1

* Blue eyes were taken separately at the Lonach gathering, and were found to form about 10 per cent. of the *light* eyes, which, in the table, included blue eyes.

An examination of the above table shows that on the average the hair is much darker in West than in East Aberdeenshire, a result which might be accounted for by the presence of a larger percentage of the North German blonde type on the east coast. The eyes, however, are lighter in the west than in the east, an anomalous result which is not so easily explained.

The following table gives an analysis of the measurements of the 90 adult males,

taken in the tent, and their correlations with pigmentation and types of noses, corresponding results obtained from the rural population of East Aberdeenshire (Mintlaw gathering) being given for the sake of comparison :—

	Per cent. of population.	Heads.		Stature.		Nigrescence.		Types of Noses.				
		Bdth.	Lgth.	ft.	in.	Hair.	Eyes.	S.	R.	W.	C.	J.
W. Aberdeenshire (90 persons) :												
General averages	—	157	198	5	8 $\frac{3}{4}$	76	40	56	22	13	6	3
Group I (158-167)	50	161	200	5	9 $\frac{1}{4}$	78	38	55	18	20	0	7
" II (153-157)	35	155	196	5	8 $\frac{1}{2}$	79	42	53	34	3	10	0
" III (149-152)	12	151	197	5	9	67	45	64	18	18	0	0
" IV (145-148)	2	146	199	5	9 $\frac{1}{4}$	83	50	100	—	—	—	—
E. Aberdeenshire (169 persons) :												
General averages	—	153	195	5	8 $\frac{1}{4}$	68	41	66	20	8	4	1
Group I (158-167)	14	161	199	5	9	70	39	70	21	9	0	0
" II (153-157)	44	155	195	5	8 $\frac{1}{2}$	66	40	68	20	11	0	1
" III (149-152)	28	150	193	5	7 $\frac{3}{4}$	67	45	61	22	4	6	0
" IV (142-148)	14	146	192	5	7 $\frac{1}{2}$	69	37	71	17	4	4	4

In the head-breadth frequency curve of the population of East Aberdeenshire we found two well marked peaks at 150 mm. and 155 mm., and two lesser peaks at 145 mm. and 160 mm. Taking these breadths as centres, we have divided the people into four groups, the limiting breadths being marked opposite each group in the above table.

The general averages given in the table show that in West Aberdeenshire the people have broader and longer heads, they are taller by $\frac{3}{4}$ inch, they are darker in hair and lighter in eyes, and they have rather higher percentages of Roman, wavy, and concave noses than in East Aberdeenshire.

The first column in the table shows approximately the percentage which each group forms of the population. Group I is much better represented in the west than in the east, being 50 per cent. of the population in the former case, and only 14 per cent. in the latter case. The average breadths and lengths of the head, in this group, come out almost exactly the same in the west and in the east, and the stature (5 feet 9 $\frac{1}{4}$ inches), which is very high for an average, differs only by $\frac{1}{4}$ inch in the two places. The nigrescence, which is calculated by a formula in which the relative value and percentage of all the colours is taken into account,¹ shows that in both the east and the west this group is darker in hair and lighter in eyes than the general average of the population. It is evidently the presence of a larger percentage of this group in the west which accounts for its superiority in *physique* over the east. Group II is well represented in both east and west. Groups III and IV are, however, almost completely absent in the west; the total numbers 11 and 2 in these groups, in the west, being so small as to make the averages for stature, etc., given in the table unreliable.

It seems reasonable to conclude from these results that, in Aberdeenshire, at some distant date, a tall, broad-headed, dark-haired, light-eyed people has been driven inland by later immigrants who were shorter, had narrower heads, and were of the blonde type.

A frequency curve of breadths of round barrow heads shows that Groups I and II were well represented in the Bronze Age in the British Isles. Groups III and IV

¹ See *Journ. Anthropol. Inst.*, vol. xxx, p. 113.

have the breadths of long barrow heads, which, however, are much longer (208 mm. on the average). The Rowgrave heads of North Germany, whose average length is given as about 200 mm., come much nearer to Group III; and as these probably represent the aboriginal blonde race of North Germany, it is reasonable to assume that our Group III represents blonde immigrants from North Germany, who, when they arrived in Aberdeenshire, found the country in possession of a tall, broad-headed, dark-haired, blue-eyed people, the descendants of the men of the Bronze Age. The resemblance of Group I to Deniker's Adriatic type is significant when taken in conjunction with the fact that bronze first came into the British Isles from South-east Europe.

Germany: Folklore.

Wuttke.

85 *Der deutsche Volksaberglaube der Gegenwart.* Von Dr. Adolf Wuttke. 3te Bearbeitung von Elard Hugo Meyer. Berlin: Wiegandt & Grieben. 1900. 8vo. pp. xvi, 536. Price 12 marks.

The original author of this work would probably hardly recognise it at first sight, for in the hands of its present editor, whose previous work in the field of German folklore clearly marked him out for the task, it has much more than quadrupled itself, and is now a work at once interesting to read and indispensable to all students of custom and belief, whether in Germany or in other countries. If he has not produced an absolutely complete work, Dr. Meyer has given us an unsurpassed collection of popular superstitions and practices. Even the specialist can turn to it with advantage to himself; if he can point out omissions, he can also learn much from it. The name of the author is a sufficient guarantee for the accuracy of the facts recorded and of their localisation, but some of us will regret that the authorities were not in all cases given. A complete bibliography of works used would have been useful, even if the editor is correct in holding that exact references are superfluous. In any case, it would have been advisable to identify the facts now published for the first time.

Another point on which many will be disposed to differ with him is the retention of the more than doubtful mythological theories of his original author. Those who wish for information on Wodan and Fro, Freya and the Valkyries, will rather turn to more reliable authorities. The book is a collection of folklore, not a connected whole, and the excision of unreliable portions would have left more space for other matter or permitted the editor to replace them by something less open to criticism. The editor has in some portions of the book appended a warning ?, but there remain a sufficient number of assertions calculated to mislead the unwary. It would, for example, have been well to modify the unqualified statement (§ 82), "the hare, probably a symbol of fertility, belongs to Ostara, the goddess of spring." The very existence of a goddess Ostara is disputed, and the suggestion that the hare belonged to her was never more than a wild guess, due to the connection of the hare with Easter, both in Germany and in this country. Many other statements might be mentioned which are more interesting than reliable: the devil's horns (§ 171) are derived from Donar's goat; and the mythological views of the original writer are throughout more prominent than their importance at the present day justifies, adopted though they be by his present editor.

It would not be difficult to compile a list of omissions, more or less important. The "Brauthahn" is not mentioned in this index, and only appears incidentally in the book; the egg-games at Easter, Blind Man's Buff, and the use of masks in general seem to be omitted; the list of animal superstitions might with ease be doubled; and the re-written section on the history of witchcraft is a little disappointing. A reference

to heathen priestesses, savage parallels, and points of connection with werewolves might well have found a place.

Completeness, however, in a "Sammelwerk" of this description is much more easy to aim at than to attain, and for the result of Dr. Meyer's efforts we should have nothing but admiration if the duty of the reviewer were not to criticise. A word of praise may be said for the index, which covers 42 pages in double columns and contains about twelve references to every page of the book. The use of the *, however, to indicate important references seems to be slightly erratic. On turning up "Tanz" in the index, § 252 is starred, but contains only $3\frac{1}{2}$ lines on the subject. The print is conveniently large, and there is a most laudable absence of errata. N. W. T.

Germany: Folk Medicine.

Jühling.

Die Tiere in der deutschen Volksmedizin alter und neuer Zeit. Von Johannes Jühling, mit einem Geleitworte von Hofrath Dr. med. Höfler. Mittweida, Polytechnische Buchhandlung (R. Schulze), N.D. 8vo. pp. 355. Price 6 marks. Presented by the Author. 86

Mr. Jühling has conceived the excellent idea of extracting the anthropological and folklore material buried in the MSS. of the University Library of Dresden. In this book we find the firstfruits of his labours—a large collection of receipts for the use of animals in medicine, most of them hitherto unpublished, together with an appendix of magical formulæ. The material is arranged in the main alphabetically according to the names of the animals, and there is also an index. It might have been well to give a little more information as to the manuscripts and to localise the superstitions better, especially where quotations from other works are in question. The work is intended for the use of the folklorist, and he wants to know where a superstition is practised. A bibliography of works cited is appended, but this does not always give a clue to the provenance of the matter cited. A dictionary of diseases would have been a laborious work, but would probably have made the book easier to use. These are, however, points of minor importance and more in the way of suggestions for the future.

Dr Höfler contributes a short introduction. He seems to take the view that human sacrifice was the original form; domestic animals were substituted for human beings, and wild animals for domestic animals. Even if the origin of the domestication of animals is not to be sought in sacrifice, there is no reason to suppose that the sacrifice of wild animals is later in time than the sacrifice of domestic animals. In a considerable number of cases the animals used in magic must be killed on a specified date or at a specified period of the year, *i.e.*, it was originally sacrificed at this date; it is therefore arguable that this is the origin of no inconsiderable part of the magical receipts. For the later developments, the doctrine of signatures, a first cousin of mimetic magic, was of great importance; bear's grease was used for bald people because the bear is a hairy animal. It is to be hoped that Mr. Jühling will soon give us the volume he promises in a footnote, and follow it up by similar works. N. W. T.

Bornholm.

Buschan.

Bornholm. By Dr. G. Buschan. From *Globus* LXXVI., pp. 84-127. 87
Presented by the Author.

Dr. G. Buschan has put together here a useful little monograph on the Island of Bornholm and its people; and has kindly presented a copy to the Library of the Institute. He deals first with the physiography of the island; then with its

prehistoric archæology, pp. 88-91; and then goes on to a full description of the modern inhabitants, their mode of life, art, and customs; illustrated with a number of photographs of costume, silversmith's work, ironwork, carpentry and buildings; mostly from objects in the local museum. J. L. M.

Corfu.

de Claparède.

88 *Corfou et les Corfiotes*: par Arthur de Claparède, Docteur en droit, Président de la Société de Géographie de Suisse, etc., etc. Geneva. H. Kündig. 1900. 8vo. pp. 177. Presented by the Publisher.

This is a handy little volume of observations of Corfu and its people, the result of three visits made in 1897 and 1899. It contains, among other matters of less anthropological interest in Part I, a good sketch of the history of the island in Ch. III; a discussion of the principal elements of the population in Ch. IV; and descriptions of the cult of St. Spiridion, and other Corfiote customs and folklore in Ch. V. In the topographical section (Part II) there is a note on the Analipsis (Ascension Day) festival in Ch. II, and one on the Corfiote sites traditionally connected with the story of the Odyssey, in Ch. IV. J. L. M.

Crete: Prehistoric.

Hogarth.

89 *The Cave of Psychró in Crete*. Communicated by D. G. Hogarth, M.A., to the Anthropological Section of the British Association for the Advancement of Science. Bradford, September 7th, 1900.

It has been known for some years that a large cave above the village of Psychró, in the Lasithi district of Crete, was a repository of primitive votive objects in bronze, terra-cotta, etc. As this cave is situated in the eastern flank of the mountain which dominates the site of ancient Lyttos, and is the only important cave known in the neighbourhood, it was conjectured that it was the Lyttian grotto connected with the story of the birth of Zeus in the legend, whose earliest version is preserved by Hesiod. A thorough exploration of it, undertaken in May and June of the current year, by Mr. D. G. Hogarth, on behalf of the British School at Athens, aided by the Cretan Exploration Fund, has served fully to confirm this view. The cave is double. On the north is a shallow grotto, the upper part of which was cumbered with immense fallen fragments of the roof. The lower part contained deep black earth, partly ransacked by previous diggers. This was thoroughly dug out this year, and when the great blocks had been broken up with blasting powder and removed, the deposit on the higher slope was also searched. The result was the discovery of a rude altar in the middle of the grotto, surrounded by strata of ashes, pottery, and other refuse, among which many votive objects in bronze, terra-cotta, iron and bone were found, together with fragments of some thirty libation tables in stone, and an immense number of earthenware cups used for depositing offerings. The lowest part of the Upper Grotto was found to be enclosed by a wall partly of rude Cyclopean character, and partly rock-cut; and within this Temenos the untouched strata of deposit ranged from the early Mycenaean Age up to the Geometric period of the ninth century B.C. or thereabout. Only very slight traces were found of later offerings. The earliest votive stratum belongs to the latest period of the pre-Mycenaean Age, that marked by the transition between the "Kamáraes" fabric of pottery and the earliest Mycenaean lustre-painted ware. But below all is a thick bed of yellow clay, containing scraps of primitive hand-burnished black and brown pottery, mixed with bones of animals. This bed seems to be water-laid, and to be

prior to the use of the cave as a sanctuary. Probably, when it was in process of formation, the cave was still a *Kataróthron* or swallow-hole of the lake which once occupied the closed Lasithi basin; but before the Mycenaean period the present outlet had opened, and the plain was dry.

The southern or Lower Grotto falls steeply for some 200 feet to a subterranean pool, out of which rises a forest of stalactite pillars. Traces of a rock-cut stairway remain. Much earth had been thrown down by the diggers of the Upper Grotto, and this was found full of small bronze objects. But chance revealed a more fruitful field, namely, the vertical chinks in the lowest stalactite pillars, a great many of which were found still to contain toy double axes, knife-blades, needles, and other objects in bronze, placed there by dedicators, as in niches. The mud also at the edge of the subterranean pool was rich in similar things, and in statuettes of two types, male and female, and engraved gems. These had probably been washed out of the niches.

The knife-blades and *simulacra* of weapons are probably the offerings of men; the needles and depilatory tweezers of women. The frequent occurrence of the double axe, not only in bronze, but moulded or painted on pottery, found in the cave, leaves no doubt that its patron god was the "Carian" Zeus of *Labranda*, or the *Labyrinth*, with whom perhaps his mother, the Nature goddess, was associated, and the statuettes probably represent the two deities. Here was the primitive scene of their legend, transferred in classical times to a cave on Mount Ida.

Crete: System of Writing.

Evans.

Writing in Prehistoric Greece. Communicated by Arthur J. Evans, M.A., F.S.A., to the Anthropological Section of the British Association for the Advancement of Science. Bradford, September 6th, 1900. 90

1. *Clay Documents with Hieroglyphic or Conventionalised Pictographic Script from the Palace of Knossos.*—The discovery originally announced by the author, in 1894, in this section, *Proc. Brit. Ass.*, 1894 (Oxford), p. 776–7, of the existence in prehistoric Crete of a system of conventionalised pictographic or hieroglyphic writing had received an extraordinary corroboration and supplement from his recent excavations in the Mycenaean Palace of Knossos. The first indications had been supplied by groups of signs engraved on early seal-stones, and by its nature the evidence was limited. But in the great prehistoric building now partially explored at Knossos, the latest elements of which can hardly be brought down later than the thirteenth century B.C., there came to light a series of deposits of clay archives inscribed both with hieroglyphic and a new system of linear writing.

Those of the hieroglyphic class, though apparently contemporary with the other, were less numerous, and were found in a separate magazine. They were in the form of square and three-sided bars, perforated at the end, clay "labels" also perforated, in shape like bivalve shells, and sealings of clay which also presented impressions of signets with characters of the same conventionalised pictographic class. The graffito characters of the clay bars, etc., gave more linearised versions of the fuller representations of the engraved seals, and thus illustrated a step in the formation of letters. The tablets showed various new forms of hieroglyphs not as yet found on the signets, raising the Cretan series to over a hundred. The pictographic signs might be said to form an illustrated history of Cretan culture in Mycenaean times. Among new characters might be mentioned an eight-stringed lyre, carpenter's tools such as a kind of plane and perhaps a level, dogs' heads, bees, a glove-like object, perhaps not unconnected with bee-keeping, and apparently olive sprays. The

obviously "ideographic," or "determinative" character of some of the hieroglyphs gives a clue to the meaning of many of the tablets. Ships, ploughs and ox-heads, vessels filled with grain, and the Egyptian palace sign speak for themselves. A *boustrophédon* arrangement of the characters is often traceable. Many of these clay records are accounts, as is shown by the presence of various numeral signs, the ciphers never exceeding eight in a group. But the form of numeration still presents points of obscurity.

The hieroglyphic script itself shows a certain parallelism with the "Hittite" inscriptions of Anatolia and Northern Syria. Its beginnings can, however, be traced very far back on Cretan soil, and it unquestionably represents the writing of the indigenous Cretan stock, the "Eteocretans" of the Odyssey.

2. *Clay Documents inscribed with Linear Script from the Palace of Knossos.*—The great bulk of the clay records discovered in the Palace of Knossos exhibited a linear style of writing fundamentally different from that of the hieroglyphic class, and far ahead of it in development. The tablets are for the most part elongated slips of hand-moulded clay, from 2 to about 7 inches in length, and from $\frac{1}{2}$ an inch to 3 inches broad; others, however, are of a squarer form. They present some distant analogy to the Babylonian tablets, and the inscription is divided by horizontal lines. The letters themselves, however, are of a free, upright European character. Some seventy characters seem to have been in common use, and of them about ten show resemblances to the later Greek, and the same number to the Cypriote syllabary. About the same number of forms are also common to the hieroglyphic Cretan series. The letters seem to have been for the most part syllabic; lines of division appear between the words, and the writing runs consistently from left to right. The pictorial origin of these letters may be traced in some cases. Thus, we have the human head and neck, the hand, the crossed arms, a bird flying, three- or four-barred gates, a fence, a high-backed throne, a tree, and a leaf. A certain number are unquestionably ideographic or determinative. Others represent measures and quantities, and are always associated with numerals. A good many of these documents evidently refer to Palace accounts, and a clue to the general purport of the tablet is often supplied by the introduction of a pictorial figure. We thus find chariots and horses, human figures, perhaps slaves, axes, ingots, vases of precious metals, others of clay for various liquids, houses or barns, swine, ears of corn, various kinds of trees and a crocus-like flower, perhaps used for a dye or perfume.

A decimal system of numeration was employed, somewhat resembling the Egyptian. The value theoretically arrived at by the author for the numerals was proved by an addition sum presented by one tablet, the total of which worked out correctly.

The ingots depicted on the tablets resembled a Mycenæan copper ingot from Cyprus, and others from Sardinia. They were followed by a balance (the Greek *talanton*) and numerals apparently indicating their value in Mycenæan gold talents. It has thus been possible to make an approximate calculation of their weight. Objects in precious metals represented were identical with some typical tributary offerings of the Keft chieftains on the Theban monuments of Thothmes III's time, and tended to show that some of these clay documents went back to the first half of the fifteenth century B.C.

Other tablets, without ciphers or pictorial figures, perhaps refer to contracts or correspondence, such as the contemporary records of Syria and Babylonia. The tablets had been originally contained in coffers of wood, clay, and gypsum, and these in turn secured by clay seals bearing impressions of Mycenæan engraved gems of the finest style. These impressions had in many cases been countermarked with a

graffito sign by the controlling official while the clay was still wet, and the back of the clay seal was at the same time endorsed and countersigned with short inscriptions in the same script as that of the tablets. Such legal precautions were quite worthy of the "Palace of Minos."

These discoveries not only carry back the existence of written documents on Greek soil some seven centuries before the first known monuments of Greek writing, and five before the earliest Phœnician, but they afford a wholly new standpoint for investigating the origin of the alphabet. The letter-forms borrowed by the Greeks from the Phœnicians seem to have been influenced by these pre-existing Ægean scripts. The common elements existing in the Phœnician alphabet itself are very noteworthy. Out of twenty-two original letters, some twelve present obvious points of comparison with characters belonging to one or other of the two Cretan scripts, and to these at least four may be added as showing possible affinities. In view of such parallelism, which extends to the meaning as well as the form of the signs, De Rougé's theory of the derivation of the Phœnician letters from remote hieratic Egyptian prototypes must be definitely abandoned. The Phœnician, and with it the Greek, alphabet must be regarded as a selection from a syllabary belonging to the same generic group as the Cretan. Such a phenomenon on the Syrian coast is perhaps explained by the settlement there in Mycenæan times of an Ægean island race, the Philistines, whose name survives in that of Palestine. Though later Semitised, their biblical names of Kaphthorim and Kerethim, or Cretans, sufficiently record their Ægean origin.

Portugal.

Anthropological Journal.

Portugalia, Materiaes para o estudio do povo portuguez. 548 rua de Cedofeita, Oporto. Price (countries of the Postal Union) per number of at least six sheets 4to, 8 francs. Vol. I, No. 1, March, 1899; No. 2, Aug., 1900. **91**

The appearance of a fresh journal devoted to their interests is always a matter for satisfaction among anthropologists, and their satisfaction is enhanced when, as in the present case, it appears not as a competitor with other journals in the same field, but to enrich our knowledge with a harvest that is waiting for the labourers. Local causes, which are fresh in our memories, during the latter part of 1899 delayed the appearance of the second part, and as compensation for the delay it is larger and better illustrated than Part I. If the numerous pictures are not all quite so successful as they might be, it would be ungrateful to lay stress on the fact when we consider how the difficulties incidental to a new undertaking have been enhanced by the importation of the bubonic plague.

Among the articles in the parts before us are:—Mycenæan art in North-West Spain; the results of an exploration of tumuli, etc., in the neighbourhood of Seixo; an anthropographic study of the Minho population; the pile-dwellings on the coast of Portugal; education in Portugal; the "villas" of North Portugal; a craniometrical study of the ossuary of Ferreiró: the pottery of Prajo, etc. These are followed by miscellanea, consisting mainly of the transactions of the Figueira Archæological Society, together with accounts of textile and fishing industries, mills, and other ethnographical material. Then come notes on museums and recent discoveries, and reviews of a number of Portuguese anthropological works conclude the number.

We trust that the path of our new contemporary may in the future be smoother, and that the highly successful beginning may be followed by a succession of numbers no less valuable than those before us.

N. W. T.

PHYSICAL ANTHROPOLOGY.

Physical Anthropology: General.

Waterston.

92 *Developmental Changes in the Human Skeleton from the Point of View of Anthropology.* Communicated by David Waterston, M.D., F.R.C.S.E., to the Anthropological Section of the British Association for the Advancement of Science. Bradford, September 8th, 1900.

A series of specimens of the long bones of the extremities at different ages of embryonic and infantile life has been collected and examined. The methods employed in the examination were those of anthropometry, namely, osteometry and osteoscopy.

By the former, the relative lengths of the bones of the limbs at different ages have been ascertained and compared one with another, and by the latter it has been found that these bones present some definite and interesting characters. Without going minutely into the rate of growth of each segment of the upper and lower limbs, the general character was shown, and the special features of the bones at different ages was demonstrated by means of lantern slides taken from photographs of the objects. An attempt was also made to ascertain the cause of the special characters found in the bones by investigating the time of their appearance and of their replacement by adult characters.

A comparison was also instituted between the bones of the embryo and those of the lower races of mankind and of the higher apes, both as regards their relative length and their characters.

As it has been shown that the curvature of the spine in the lumbar region is a post-natal development, and one adapted to the assumption of the erect attitude by the infant, it was shown that in a similar way the configuration of the bones of the lower extremity alters after birth, before the infant can stand erect.

Kephalic Index.

Beddoe.

93 *On some Vagaries of the Kephalic Index.* Communicated by John Beddoe, M.D., LL.D., F.R.S., to the Anthropological Section of the British Association for the Advancement of Science. Bradford, September 8th, 1900.

The great value of the kephalic index has hardly ever been questioned by any school of physical anthropologists. There are of course certain groups of facts the consideration of which tends to raise a doubt of its absolute permanence in any race, such as the occasional occurrence of marked brachykephaly among the remains of primitive dolichocephals, and the substitution unexplained, as yet, of moderate brachykephaly for dolichocephaly in many parts of the Slavonic area. But whether we accept the views of De Lapouge and Ammon as to the transformation of types through social selection, or whether we follow Sergi in the multiplication of permanent types which "au fond" arrange themselves into two great groups, the division of longheads from shortheads still continues to have great importance. In individual cases, however, far too much is often made of it. Thus, we may have a broad head of a dolichoid type, or, less often perhaps, a narrow head of brachy type. I propose in this little paper to describe two specimens of dolichoid character which lately came in my way, one of which yielded an index which, taken by itself, would have relegated it to the brachy division. One of these immediately followed the other in the course of my work. Both of them, before I had gotten their measurements, had been set down in my mind as of fairly pure Anglo-Saxon breed; but the former one especially struck me as being so, his fair complexion, blue eyes and

pale red hair, together with his general pattern of body, constituting him apparently an exquisite example of the pure dolicho blond.

The facial features in these two subjects are not very much alike, owing chiefly to the greater length and less breadth of the lower jaw in B: the upper part of the face is however nearly identical. B is a west-countryman and probably less Teutonic.

Description.	A.			B.	Measurements.	A.	B.	
Individual	Dr. I.	....	Rev. W.	Kephalic Index.	82.23	78.06	
Locality	{ Aberdeen and Northumberland		Somerset	Lengths.	Glabello-maxi- mum.	197	196
Complexion	Fair	....	Fair.		Fronto-inial	194	190
		Glabello-inial....	192	190
		Ophryo-maxi- mum.	193	192
Face	Ovo-Elliptic	....	Long-Scutiform.		Face, from Nasion.	120	127
Forehead	Dome	....	Dome.	Breadths.	Fronto-min	105	106
Brows	Arched prominent	....	Arched promt.		Stephanic	128	131
Nose	Busqué	....	Straight.		Zygomatic	133	135
Cheekbones	Moderate	....	Moderate.		Auricular	132	132
		Maximum	162	153
		Mastoid	152	142
Chin	Med. prominent	....	Med.	Bigonial	114	92	
Head	Oval	....	Oval, high.	Circumference	591	570	
Occiput	Rather prominent	....	Rather promt.	Arcs.	Nasio-inial	366	358
Eyes	Blue	....	Blue.		Transverse auricular.	368	378
		Supraciliar	317	296
Hair	Pale red	....	Lightish-brown, thin.	Nasal.	Length	56	54
						Breadth	36	37
						Index ...	64	68.5

The longitudinal measurements of the two heads differ very little; but those of A indicate that his forehead is more highly arched and his upper occipital region less prominent than those of B. In fact there is in B a notable degree of what the Germans call *absätzung* of the upper occipital, causing a parieto-occipital furrow. The dolichocephaly is more occipital in B, the auriculo-superciliar are being decidedly larger in A.

But in the breadths A develops a singular anomaly. While all his anterior breadths are either the same or slightly less than those of B, the maximum breadth, which in A is temporal, is greater by nine millimeters than in B, and the mastoid greater by ten. The cause of this has evidently been connected with delayed ossification of the temporo-parietal sutures, along the line of which, especially in their posterior parts, the temporal bones can be felt standing out prominently. The temporo-sphenoid sutures are unaffected, and the auricular breadth, taken in the pits above the roots of the zygomata, just in front of the ears, is consequently the same as in B. Now we may pretty safely say that, but for this protrusion of the posterior part of the temporal bones, the maximum and mastoid breadths in A would have been about the same, or perhaps even a little less than in B, in accordance with the general form of the two crania. In that case the kephalic index of A would have been about 77, or let us say, making the usual allowance, about 75 in the skull, on the confines of

dolichokephaly and mesokephaly, instead of being actually brachykephalic. That the parietal breadth in A was really rather small is confirmed by the moderate dimension of the transverse arc: this is actually much less than in B, who had the parietal eminences well developed. On the other hand, if we imagine the head of B divested of the before-mentioned *absätzung* or protrusion, which probably increases the maximum length by two or three millimeters, its latitudinal index might probably enough be increased by a degree or more. Thus, the index of A being 77, and that of B 79, that of A would be less than that of B by 2, instead of being greater than it by 4, a relative change of 6 altogether between the two.

It may be objected that the peculiarity of the posterior temporal region in A stamps the head form as pathological, and that A should therefore be excluded from appearing in any series of measurements. But if so, should not B also be excluded, by reason of the protrusion of the upper part of the occiput, a reason, by the way, that would exclude all the skulls of His and Rutimeyer's Hohberg type, for they have all that same peculiarity of late ossification of the posterior fontanelle. And what of metopic skulls, in which the increase of breadth generally extends, though in a slighter degree, from the frontal to the other points at which we measure skull-breadth? Scapho-kephalism is regarded as pathological; but minor degrees of it, such as are frequently met with in long roof-shaped skulls, are not and cannot conveniently be excluded from averages, and divers observers will draw the line of exclusion differently.

Of course I cannot, in this brief note, enter on the great question which underlies my whole subject, viz., how far the orderly development of the skull is influenced by variations in that of the brain. Lucæ and others did good work in this field long ago: but I am not aware whether anatomists have given much attention to it of late years.

Cranium.

Dixon.

94 *On certain Markings on the Frontal Part of the Human Cranium, and their Significance.* Communicated by Professor A. Francis Dixon, M.A., to the Anthropological Section of the British Association for the Advancement of Science. Bradford, September 8th, 1900.

An examination of the frontal region of the cranium shows that, in many cases, grooves or channels are present on the bone, corresponding to the branches of the supra-orbital nerves. These grooves vary very much in appearance, as they may be simple or branched, shallow or deeply cut. They are not infrequently converted in parts of their course into little tunnels. In some cases they are found on one side of the cranium only, in others they occur on both sides; their distribution is very rarely quite symmetrical. Most frequently the grooves occur beneath the outer branches of the supra-orbital nerve, but in many cases they are found beneath the inner branches. The grooves never pass from the frontal on to the parietal bone—across the coronal suture. They often extend upwards from the supra-orbital notch, or foramen, as far as the coronal suture; in other cases they begin inferiorly at a little foramen where some branch of the nerve enters the bone. The openings of these little foramina are directed upwards towards the coronal suture, just as the openings of the nutrient foramina in the long bones are directed towards the end of the bone, where growth is most active and goes on longest.

Other the presence of these grooves indicates a want of proportion between the growth measurement of the nerves and the amount of expansion of the underlying part of the the former. The nerves might be looked upon as constricting cords which become

depressed in the developing bone as the cranium expands. The constricting portions of the nerves are often limited inferiorly at a point where some little branch enters the bone, and superiorly at the coronal suture, where the deep layers of the scalp are firmly bound down to the cranium. Hence the grooves for the nerves do not cross the coronal suture, and often begin inferiorly at little foramina whose openings are directed upwards. The grooves appear to indicate, in the skulls in which they occur, an excessive development of the frontal part of the cranial wall. In races in whom the grooves are common, and strongly marked, we should expect the presence of a tendency towards increased development and capacity of the frontal part of the cranium; while, on the other hand, in races in whom the grooves do not occur, or are rare, and but feebly marked, we should expect to find much uniformity in the shape and size of the cranium, indicating that none of its various parts are tending towards an increased development. In the purer races of mankind, with marked uniformity in the size and shape of their crania, we should look for the greatest harmony between the growth in length of the overlying structures and the amount of expansion of the various parts of the cranial wall; on the other hand in mixed races we should be more likely to find individuals exhibiting a want of such correspondence in the amount of growth of the superficial and deeper structures. In this connection it is interesting to note that the frontal grooves are almost never found in Australian and Tasmanian skulls, that they are rare among Melanesians, slightly more common among Polynesians, while among Bushmen and Negroes, especially in Zulus and Kaffirs, they are very common, and often extraordinarily well marked. Among Negroes they are present in over 50 per cent. of the skulls examined. In the skulls obtained in the dissecting room they are present in about 41 per cent. of all cases.

Sacral Index.

Cunningham.

On the Sacral Index. Communicated by Professor D. J. Cunningham, M.D., F.R.S., to the Anthropological Section of the British Association for the Advancement of Science. Bradford, September 8th, 1900. 95

Inasmuch as the true length of the sacral portion of the vertebral column is not indicated by the shortest distance between the apex and base of the sacrum, but rather by the length of the curve formed by the sacral vertebrae, it is proposed that, in making measurements for the determination of a sacral index, "length" should be measured by using a tape along the concavity of the sacral curve, and not by calipers, one limb of which is placed upon the base, and the other on the apex of the sacrum. Breadth (measured by calipers in the ordinary manner) multiplied by 100 and divided by length, measured in the manner indicated, gives the true sacral index.

The curvature of the sacrum may be conveniently plotted by taking a tracing from a strip of soft metal which has been previously adapted by pressure to the front of the sacrum along its middle line. The index of curvature may be expressed by the number derived by multiplying the height of this plotted curve by 100 and dividing by the number corresponding to the true length of the sacrum.

Physiology.**Foster.**

96 *A Text-Book of Physiology.* By Professor Sir Michael Foster, M.D., F.R.S. 4 vols. 8vo. London: Macmillan and Co. Sixth Edition, 1900. Price £2 2s. Presented by the Publishers.

This text-book has been so well known for many years as the representative English epitome of physiology, that no notice of it from the standpoint of a general student of this science could possibly be required. Although a knowledge of the groundwork of physiology is a fundamental essential to all physical anthropologists, the sections of widest interest in relation to our science are those contained in Volumes III and IV, dealing respectively with the functions of the central nervous system and of the special senses. In these a brief but comprehensive *résumé* of the structure, both macroscopic and microscopic, of the organs concerned precedes the relation of all well-established facts regarding their function and of the theories based upon them. Of special importance to the anthropologist are the paragraphs describing the framework of physiological psychology under its various aspects, and more especially those which discuss the investigations into the time relationships of cerebral processes, whether simple, such as the mere acknowledgment of a sensation, or complicated, as when a choice or discrimination has to be made between two sensations, or, still more so, as in the more involved mental processes. This is the method which is employed to find the so-called personal equation of individuals, and efforts are also being made, by ascertaining the personal equation of many individuals of different races, to discover whether anything of the nature of a *racial* equation can be elicited.

In the volume, on the special senses, problems relating to the acuity of sensation among individuals are dealt with, both by Sir Michael Foster himself and by Dr. Rivers. Work is being attempted from time to time on the racial variations, as opportunity offers, in connection with such differences.

Although somewhat lengthy, no simpler, yet at the same time more complete, treatise on general physiology and its kindred problems is to be found in our language.

F. C. S.

Descent of Man.**Morris.**

97 *Man and his Ancestor: A Study in Evolution.* By Charles Morris. London: Macmillan and Co., 1900. 8vo. Presented by the Publishers.

This little work gives an excellent epitome of the evidence at present available of man's evolution, its only serious drawback from a popular point of view being a tacit assumption of some knowledge on the part of the reader of the elements, or at least the terminology, of anatomy and physiology. The author begins by a study of vestigial remains in man, showing his descent from a quadrupedal ancestor; then, after a brief discussion of the development of intelligence and the origin of language among the lower animals, summarises the links in the chain bridging the chasm between these and man. He lays great stress on pygmy races, especially in their relation to the negro peoples, but regarding them as preceding the present races in all quarters of the globe. The book concludes by several chapters on the evolution of intelligence and morality in the history of the varieties of our species, the dominant note being that in reviewing this subject we are concerned with man's past rather than his future, which will work out as a resultant of forces of which at present we have scarcely the vaguest conception.

This book can be confidently recommended to all who desire in a short compass a summary of all the known facts bearing on human phylogeny.

F. C. S.

Ethnography: General.

Deniker.

The Races of Man: An Outline of Anthropology and Ethnography. By J. Deniker, Sc.D. London: Walter Scott, 1900. 8vo. pp. xxiii, 611, with 176 illustrations. Price 6s. Presented by the Publisher. 98

In this densely packed volume, which forms one of the *Contemporary Science Series* edited by Mr. Havelock Ellis, the author has attempted an almost impossible task with a fair measure of success. Within the compass of a little over 600 small octavo pages he has contrived "to give in a condensed form the essential facts of the twin sciences of anthropology and ethnography," finding room at the same time for no less than 175 illustrations, which, it may be added, are of almost uniform excellence. M. Deniker, a distinguished member of the brilliant school of French anthropology, has hitherto devoted his chief attention to the physical side of the subject, in this following the precedent of his illustrious associates the late Paul Broca, and de Quatrefages, Dr. Hamy and Dr. Topinard. Hence the section occupied with anthropology in the stricter sense, which is here defined to be the science concerned with "the somatological characteristics of the genus *Homo* whether considered as a whole in the relation to other animals, or in his varieties," is naturally more satisfactory than the chapters dealing with the several ethnical groups and their minor divisions. In the introduction, which is mainly occupied with the usual discussion on such general concepts as "people, nation, tribe, race, species," a sharp distinction is drawn between specific and ethnic groups, and the reader is left to infer that the term *species* as used by zoologists is scarcely applicable to the present human divisions at all. There is of course a genus *Homo*, which, however, consists not of so many species, sub-species, varieties, or races, but of ethnic groups formed by a community of speech, religion, social institutions, etc., but are by no means zoological species, since "they may include human beings of one or of many species, races, or varieties." Thus the ethnic or social groups described in this work under the names of tribes, nations, peoples, and so forth, are regarded as an aggregate of individuals belonging to two or more somatological units. Such units are, however, merely "theoretical types" which are formed by a certain combination of physical characters, and whose actual existence may be established by a careful analysis of a large number of individuals taken haphazard in any given ethnic group. They are entities, or theoretic conceptions analogous to zoological species, but for the most part modified by crossings, hence rarely occurring as perfect types of the somatic units. Moreover, the more cultured the ethnic groups, the more they are found to consist of heterogeneous elements, that is, the more numerous are the somatic units, so that among primitive peoples alone can we hope to find coincidences between the two terms. In fact "those peoples are almost undiscoverable who represent somatological units comparable to the species of zoology." Hence the questions of specific unity, monogenism or polygenism lose much of their importance, are declared to be "somewhat scholastic," and even completely "sterile and futile." Nevertheless it was necessary to dwell upon the author's views on the concepts of species, types, and physical units, because they lie at the base of his scheme of classification, as originally expounded in the *Bulletin* of the Paris Society of Anthropology (June, 1889), and here revived in a modified form (pp. 284 sq.). The twenty-nine "types" or subdivisions of the thirteen "races" in this remarkable scheme, which takes physical characters alone into consideration, are now also called "races," or "sub-races," and disposed under the six subjoined divisions, where it will be noticed that the hair, as in some other systems, is accepted as the chief criterion:—

A. Woolly hair, broad nose (4 races and sub-races).

- B. Curly or woolly hair (4 races).
- C. Wavy brown or black hair, dark eyes (7 races).
- D. Fair wavy or straight hair, light eyes (2 races).
- E. Straight or wavy hair, dark black eyes (4 races).
- F. Straight hair (8 races).

For this scheme it is claimed that it brings together the most salient somatic characters of the several races, while it is admitted that, being dichotomous, it cannot exhibit their exact grouping according to their true affinities. Each race shows some features in common with others even at a distance from it in the table, and in order to exhibit such affinities "it would be necessary to arrange the groups according to the three dimensions of space, or at least on a surface where we can avail ourselves of two dimensions." The curious diagram by which this was effected, and which is reproduced in my *Ethnology* (p. 169), is here replaced by another table (p. 287) which at first sight looks somewhat chaotic, but on inspection is found to include 29 races combined into 17 groups, so disposed that those having the greatest affinities one with another are brought close together. Thus the Bushmen, for instance, are seen from their position to have affinities both with the Negritos (short stature) and with the Negroes (hair, nose); the Dravidians with the Indonesians and Australians; the Turks with the Ugrians or the Mongols; the Eskimo with the Mongols and the Americans; the Assyroids (Armenians, Jews, Kurds, etc.), with the Adriatics (West Europeans) and the Indo-Afghans; and these last with the Ethiopians (my Eastern Hamites) and the Arabs. The arrangement is of course open to criticism from various points of view; but systematists and others will perhaps prefer for the present to study it carefully in the light of the explanatory text, which is both stimulating and highly instructive in several respects. It suggests one broad inference, which, although not drawn by the author, lies at the base of Blumenbach's classical treatise *De generis humani varietate nativa*, and shows almost to the eye how all races merge so imperceptibly one in the other that they collectively form not species but varieties, so that "vix ac ne vix quidem limites inter eas [varietates] constituere poteris."

After establishing his classification, as above briefly outlined, M. Deniker takes up the strictly ethnical section of his theme, devoting a chapter each to the races and peoples of Europe, Asia, Africa, Oceania, and America. This purely geographical distribution is obviously independent of his original scheme, and appears to be adopted merely for convenience of treatment in a work addressed more to general students than to specialists. But it inevitably leads to difficulties, as in the case of the Oceanic Negritos (Aetas, Sakais, Andamanese), who have to be divorced from their natural connection with the African Negritos (Akkas, Batwas, etc.), and "included in the long list of the aboriginal peoples of Indo-China." Here the obsolete term "Minkopis" is unfortunately revived, and the whole section is disfigured by a large number of errors, some rather serious, which should be rectified in future editions. Subjoined are a few of the more important, taken promiscuously from the ethnological part of the volume. The Barabras (Nile Nubians) are said to belong "not only by their language but also by their physical type" to the Arabo-Berber group. But the speech of the Arabs is Semitic, that of the Berbers Hamitic, and that of the Barabras Negro (see Lepsius, *Nub. Sprache* and my *Ethnology of Egyptian Sudan*). Junker is referred to on "the Momvus or Mombuttus, who must not be confounded with the Mangbattus." But Junker separates the Momvus (Momfus) from the Mombuttus, whom he shows to be the same people as the Mangbattus (see my English edition of his *Reisen in Afrika, passim*); and on the same page (440) we read of the "Mangbattus or Monbuttus" correctly. "Mechra-et-Reg" (p. 445) is an impossible forma-

tion, and should be *Meshra er-Reg* (phonetically) or *Meshra-el-Reg* (orthographically). The "Mandarin or northern (Chinese) dialect" is rightly distinguished from "that (read those) of the south," but wrongly connected with "the Hakka speech employed in Kwang-tung." Hakka is in fact one of the primitive forms still current in Kwang-tung and conterminous southern provinces, and quite distinct from Mandarin (Dyer Ball, *Easy Lessons in the Hakka Dialect*). The Kuis of Camboja are spoken of as a distinct people from the Cambojans (p. 393), whereas they are the primitive stock, and call themselves *Klmer-dom* ("Original Cambojans"). In Madagascar "the Arab invasions date back hardly five or six centuries" (p. 471). On the contrary the Semitic elements in the Malagasy language show that the first arrivals date from remote (pre-Muhammadan if not pre-Christian) times (see my *Man Past and Present*, p. 251). The Algonquian *Chippewas* (Ojibwas) are confused with the Athabascan *Chippewayans* (p. 524); and the Lipans are located in Mexico instead of Texas, their original home, although a few bands have in recent times moved west of the Rio Grande, while others are settled in the Oakland Reserve, Indian Territory. (See Powell's *Indian Linguistic Family*, pp. 54 and 56.) More serious is the statement that "none of the tribes of the New World have a red-coloured skin unless they are painted," which will scarcely commend itself to such careful observers as, for instance, Mr. im Thurn ("very red cinnamon"), and Dr. Ehrenreich ("noch mehr ins Röthliche spielend; etwa frisch gebrannten irdenen Töpfen entsprechend," etc., etc.).

In the chapter dealing with the European peoples a brief review of the "Aryan Question" states the different views in moderate language, and points out that the problem no longer possesses the importance that formerly attached to it. "All we can legitimately suppose is that in the period touching the neolithic age, the inhabitants of Europe were *Aryanised* from the point of view of language, without any notable change in the constitution of their physical type, or probably of their civilisation." This conclusion can scarcely any longer be doubted, though it of course leaves unanswered the question, how the great bulk of the European populations were induced to adopt Aryan forms of speech long before the close of the New Stone Age. Much, however, is gained by the absolute rejection of the old theory, originating with the philologists, that these populations, despite their great physical differences, were all alike of Aryan stock.

So numerous are the differences that M. Deniker is not satisfied with the three broad divisions into *Homo Europæus* (the tall, fair, long-headed northerners) *H. Alpinus* (the medium-sized, brown, round-heads of the central uplands and eastern plains), and *H. Mediterraneus* (the short, variable long-heads of the Mediterranean lands) accepted by Ripley and others. His own scheme, at which he has worked for several years and here sums up, distinguishes six principal and four secondary races, and the reader will be grateful for the small but remarkably clear ethnological map showing the present distribution of these ten varieties. The study of this somewhat intricate arrangement is further facilitated by a whole series of excellent illustrations taken from trustworthy sources.

The work is also enriched by several rather full tables of physical characters—stature, cephalic index, nasal index—which are conveniently brought together in the appendices, and will certainly be welcomed by professional anthropologists. There are also numerous tables of orbital and other indices in the body of the work, which is completed with indexes of authors and subjects, and is clearly printed on good paper and stoutly bound in cloth, while the low price (6s.) should bring it within the reach of a wide circle, and thus help to promote the strangely neglected study of the anthropological sciences amongst the English reading public.

A. H. K.

Child-Study.

Warner.

99 *Mental and Physical Deviations from the Normal among Children in Public Elementary and other Schools.*—Report of the Committee of the British Association for the Advancement of Science, consisting of Mr. E. W. Brabrook (Chairman), Dr. Francis Warner (Secretary), Mr. E. White Wallis, Dr. J. G. Garson, and Dr. Rivers. Drawn up by the Secretary; presented at Bradford, September 4th, 1900; and printed in full in the *Proceedings of the British Association*, 1900 (Bradford). London, John Murray.

The Committee, acting in conjunction with the Childhood Society for the Scientific Study of the Mental and Physical Conditions of Children, have, through the assistance of that society, been able to use the cards recording the "cases with any abnormal nerve-sign," as seen 1892-94; that is, 2,851 boys, 2,003 girls, as found among 26,287 boys, 23,713 girls examined.

As a new method of research these cases are arranged in primary groups containing the children who presented nerve-signs in (1) the face only; (2) the hand only; (3) eye-movements defective only; and (4) a group showing nerve-signs in other parts of the body only.

In making a rapid examination and report on children examined in schools, it may be convenient to classify nerve-cases in four groups as presenting signs in (1) face (defect of expression, overaction of the frontal muscles, knitting the eyebrows, muscular relaxation about the lower eyelid); (2) in balance of the hand or finger twitches; (3) irregular movements of the eyes; (4) in general balance of the head and other parts of the body. Twenty-one nerve-signs have been observed and defined,¹ the cases presenting these signs are grouped in classes under the headings named according to the parts of the body in which they are seen.

To the full Report are appended three tables showing, for the 50,000 children examined 1892-94, all cases presenting one or more abnormal nerve-signs, arranged in age-groups. These three cases are classed in primary groups presenting nerve-signs in the parts indicated only, viz.: (1) the face; (2) the hand; (3) eye-movements; (4) in other parts of the body. The cases are further distributed in primary groups under the main classes of defect.

The total number of children with any class of nerve-signs is obtainable by adding the eight primary groups presenting that class, thus: Among the children 7 years and under, adding the eight groups enumerating signs in the face gives a total of 343 boys, 179 girls. Again, addition of the three groups enumerating signs in face and eye-movements gives a total of 21 boys, 20 girls, with the two classes of nerve-signs.

The numbers in each primary group of nerve-cases are given in the last column of the table appended to the Report, and are distributed again as primary groups according to the main classes of defect observed associated with the nerve-signs. Thus:

Column headed B gives cases with nerve-signs only.

AB=Nerve-signs associated with development defect only.

BC=Nerve-signs associated with delicacy only; children pale or thin.

BD=Nerve-signs with mental dulness only.

ABC=Nerve-cases with developmental defect and delicate only, i.e., not dull or backward.

¹ See *Report on the Scientific Study of the Mental and Physical Conditions of Children, based on the examination of 100,000 children*, p. 76. Published at the Parkes Museum.

From the same tables appended to the full Report the compound groups can be formed by addition of the primary groups composing them, and from these the correlations of the classes of nerve-signs with the main classes of defect, can be obtained after the method explained in Dr. Warner's paper, in the *Journal of the Royal Statistical Society*, March, 1896.

Among the nerve-cases here reported on, the relative frequency of nerve-signs in the face, the hand, and in eye-movements is shown to be as follows :—

Age Groups.	Total No. of Cases.		FACE. Total No. of Cases.		EYE-MOVEMENTS. Total No. of Cases.		HAND. Total No. of Cases.	
	Boys.	Girls.	Boys.	Girls.	Boys.	Girls.	Boys.	Girls.
7 years and under....	742	489	343	179	94	74	300	209
8-10 years	1,229	878	473	250	153	127	690	503
11 years and over....	880	636	317	141	104	58	530	426
At all ages	2,851	2,003	1,133	570	351	259	1,520	1,138

Other researches were made, but when they did not appear to supply useful information the results were not included in the tables. It was thought that there might be a definite association between irregular movements of the eyes and twitchings of the fingers ; the facts given below do not support the premiss. Again, the association between irregular eye-movements and overaction of the frontal muscles (frowning) is not very marked, though more frequent than in the last case.

Primary Groups.	Age Groups.					
	7 and under.		8-10.		11 and over.	
	Boys.	Girls.	Boys.	Girls.	Boys.	Girls.
Eye-movements and finger twitches only.	—	—	—	—	—	—
Eye-movements and finger twitches and other nerve-signs.	2	1	7	3	2	—
Eye-movements and frontals over-acting only.	7	2	12	2	3	—
Eye-movements and frontals and other nerve-signs.	5	2	16	2	9	2

This Committee, first appointed in 1892, have reported each year¹ and information thus supplied concerning the mental and physical conditions of childhood has afforded evidence in a wide field of research. Among other problems advanced it has been shown that, with certain constitutional conditions of congenital deficiency and acquired defects as found among boys and girls respectively, the status varies in the age-groups. It appears highly probable that the heavy mortality under five years of age, which falls principally on the boys, is largely due to developmental defects, while

¹ The reports will be found in the corresponding volumes of the *Proceedings of the British Association*.

children with such congenital defect who survive add largely to the proportion of the dull and delicate pupils in schools, and to the number of neurotic persons who often fail in health at adult age.

The main classes of defect among children are more frequent with boys, while the girls with defective constitution tend in larger proportion than the boys to ill-health and brain disorderliness.

To summarise problems previously demonstrated, development-defect cases are very frequently delicate and dull. Children with (motor) brain disorderliness are often dull; so are the children who are naturally delicate. Dull pupils often present defect in development as well as delicacy and (motor) brain disorderliness needing special care and training.

Departures from the normal are more frequent among males; but the females with developmental defect or brain disorderliness are more apt to receive harm and to receive less good from their environment than males. This indicates the care required, and is illustrated by the more hopeless condition of female lunatics and criminals.

It has been shown that good effects follow the employment of physical training at school in diminishing the number of children with signs of brain disorderliness and the proportion of dull pupils.

Children in Poor Law and industrial schools are below the average in bodily development and mental ability. It appears that home life and day school training are more advantageous than institution training.

The investigations that have been carried out and study of the distribution of cases of developmental defeat in various localities have suggested that sanitation and the practical application of hygienic principles to school life may lessen the frequency of developmental defects and the proportion of mental and physical weakness and mortality co-attendant.

In conclusion it has been shown by many examples that detailed examination and report on the children in selected schools has proven many points of social and scientific value.

Since this report was drawn up an important mathematical paper "On Association of Attributes in Statistics, with illustrations from the Material of the Childhood Society, etc.," by Mr. G. Udny Yule, has been published in the *Philosophical Transactions of the Royal Society*. The suggestions there made as to statistical methods of presenting correlations are likely to prove most useful in future research.

Charts have been prepared from these Reports by Mr. C. S. Loch and exhibited at the Paris Congress by the Charity Organisation Society.

Microcephaly.

Cunningham.

100 *On the Microcephalic Brain.* Communicated by Professor D. J. Cunningham, M.D., F.R.S., to the Anthropological Section of the British Association for the Advancement of Science. Bradford, September 8th, 1900.

The brain of the microcephalic idiot may exhibit features which do not merely represent a "fixed" embryonic condition. In one specimen the arrangement of the fissures and sulci is found to approach more closely the ape than the human type, and in almost every furrow some simian character can be detected. These simian characters must not be considered mere foetal conditions rendered permanent. The ape-like condition existing in this brain does not as a whole correspond to that of any one ape, or group of apes, but there is a complicated mixture of features, some of which are characteristic of high apes, while others find a parallel

in the brain of low apes. The microcephalic brain may be regarded as a partial "atavism." So far as its surface markings are concerned, the specimen noted has reverted in part, or wholly, to an arrangement which, in all probability, existed in some early stem-form of man.

Finger-Prints: Classification.

Garson.

A System of Classification of Finger-Prints. By J. G. Garson, M.D., Expert Adviser on Identification of Criminals. Communicated to the Anthropological Section of the British Association for the Advancement of Science. Bradford, September 11th, 1900. **101**

This system of classifying finger impressions has been devised to be worked in conjunction with classification of records by measurements, such as those of the head and limbs, for the purpose of facilitating search for previous records of criminals. It is also applicable for the classification of small collections of records without the concurrent use of measurements.

The patterns—three in number—which the ridges on the palmar surface of the terminal phalanx of the fingers form, are indicated by the use of the following signs:—

An arch is indicated thus	...	...	...	...	...	...	^
A loop which opens on the left and slopes thus	...	...	...	...	...	...	/
A loop which opens on the right and slopes thus	...	...	...	...	...	...	\
A whorl of any kind, thus	...	...	...	...	...	...	O

These signs, which are graphic representations of the ridge-pattern as it actually appears in the impression of a finger, are used to indicate the finger formula of an individual, which is noted on a prominent part of each record.

For this classification the patterns on the thumb and three following fingers of the right hand are selected, or as many of them as may be necessary; the thumb and forefinger are always required, and when the divisions given by these two fingers are large, the middle finger, or the middle and ring finger impressions are also requisitioned to reduce the size of the divisions.

Two divisions are made by the pattern on the right thumb, according as it happens to be (I) an arch, or either form of loop: (II) a whorl. By the thumb therefore two divisions are obtained.

Each of these two divisions is broken up into four smaller divisions by the pattern on the forefinger according as it is (a) an arch; (b) a loop with the mouth or opening on the left; (c) a loop with the opening or mouth directed towards the right; (d) a whorl.

Of the eight divisions thus obtained no further subdivision is necessary in six cases, namely in (a), (b), and (d) of I division, and of (a), (b), and (c) of II.

Taking (c) of I division, namely, those cases where there is an arch or either form of loop on the thumb, and a loop opening to the right on the forefinger, subdivision by the middle and ring fingers is necessary; this is done by separating the cases when there are loops opening to the right on each of the four fingers, from those in which there is any other combination which may obtain.

Passing on to (d) of II division, namely, the cases in which there is a whorl on the thumb and forefinger, subdivision by the midfinger only is required, into those in which that finger, like the two preceding fingers, bears a whorl and those in which there is an arch or other form of loop on the midfinger.

By this means we get altogether ten divisions which are of approximately equal

size, except (a) of II (that in which the thumb bears a whorl and the forefinger an arch which is the smallest). It can be equalised more or less with the others in the following manner:—In any given number of individuals there will be some cases found (especially if the class of the population from which the impressions are obtained belong chiefly to the labouring class of mechanics), where one or more of the four fingers used in classification have been damaged from one cause or another so that the pattern of the ridges is undecipherable, or one or more fingers of either hand have been partially or completely lost. In adult criminals such cases amount to about 5·6 per cent. In any system of classification it is necessary to provide for such emergencies, but it is not necessary that they be separated from the others in a division reserved specially for themselves. When these are added to (a) II group it is brought up to the level of some of the other groups.

The following is the scheme of classification reduced to tabular form and the percentage of cases in each of the ten divisions is shown in the lowest line:—

Right thumb	Λ / \				O				
Right fore finger	Λ	/	\		O	Λ	/	\	O
9·3 13·5		Rt. thumb, middle, and ring fingers			10·8	3·2	9·8	7·9	Λ / \ O
		any other combination on the above fingers				and with damaged and lost fingers (5·6) = 8·8			10·7 9·4
		12·1 7·7							

With the above ten divisions, worked in conjunction with, and secondary to, classification by measurements, sufficient power is available to enable the records of a large number of criminals to be easily manipulated. For example, if only four measurements be used in the tripartite classification which universally obtains (giving 81 divisions) by the use of this decimal subdivision by finger-prints, a total of 810 divisions are obtained, while if five measurements be taken as adopted in England (giving 243 divisions), by the combined system we have increased our powers of effective classification ten times, and obtain no less than 2,430 divisions; and that without putting any strain on either source of classification.

Finger-Prints: Roman.

Turner.

102 *Note on a Mould showing the Finger-Prints of a Roman Sculptor, probably of the Third Century A.D.* Communicated by Professor Sir William Turner, M.D., F.R.S., to the Anthropological Section of the British Association for the Advancement of Science. Bradford, September 10th, 1900.

While staying lately with a friend in the City of Lincoln, Sir William Turner was informed that when the foundations of the house, which lay on the line of the ancient Ermyu Street, were being dug, bases of Roman columns were excavated. On

examining these closely, the impressions of the finger-prints of the sculptor were very plainly discernible. Specimens of the impressions were exhibited in illustration of the paper, and at the close several members of the audience said that they had observed impressions of a similar kind in connection with columnar remains elsewhere.

Physical Anthropology.

Cross-References.

Other articles in the present volume dealing with special points of Physical Anthropology will be found under Nos. 20 (Egypt) ; 75 (Malay) ; 83 (England) ; 84 (Scotland) ; 46 (Rotama) ; 117 (Skin Marks). **103**

PSYCHOLOGY.

Psychology.

Hartog.

Interpolation in Memory. Communicated by Professor Marcus Hartog, M.A., D.Sc., to the Anthropological Section of the British Association for the Advancement of Science. Bradford, September 12th, 1900. Published in full in the *Contemporary Review*, October, 1900. **104**

Many educational syllabuses that profess to rest on a psychological base assume that the only guidance for action is a sensation which has been memorised by frequent repetition. The mind, however, seems to have the power of classifying the memories of each category apart and in order of magnitude and direction ; completing the records of single memories, with what may be compared with an interpolation curve ; and even extrapolating on either side : so that, if a suitable response have been learned to a limited number of sensations, a new intermediate sensation will produce a new appropriate response. This capacity for interpolating has been long recognised in various arts, and is known as "faculty," "feeling," etc. It has not, however, been definitely recognised by the psychologist, who has rather asked whether the *conscious* memory and judgment can construct intermediate sensations between those he has learned from experience, than whether there is a power in virtue of which it can recognise the appropriate position of new sensations, or appropriately act on the stimulus of new sensations when they occur.

Similarly with combinations of intermediate sensations the mind can simultaneously act on them and execute the combined appropriate response, in much the same way as the pencil of a tide predicting machine is simultaneously acted upon by the independent wheels. This is shown by the now received fact finally proved by Richet that each mental act takes about $\frac{1}{10}$ second, and any but automatic (*sit venia verbo*) combination and judgment is usually out of the question, from a lack of adequate time.

Illustrations of these views were quoted from the domains of house-keeping, the plastic arts, cards, billiards, and language. It was urged that an *a priori* method of instruction from incomplete premises must be regarded with extreme caution.

Psychology.

Stokes.

On the Perception of Force. By Professor G. J. Stokes, M.A., Queen's College, Cork. Communicated to the Anthropological Section of the British Association for the Advancement of Science. Bradford, September 12th, 1900. **105**

According to the most generally accepted view, the idea of force is obtained from the muscular sense. It has also been attributed to touch. The most important question is, whether the perception is connected with the motor or sensory nerves.

If the latter view be adopted, it has been thought that the sensation can reveal nothing of the objective cause. As recent investigation seems to compel the adoption of the latter view, the objective character of the perception can only be saved if we admit the presence of an objective character in all sensation. If Wundt's theory of the original indifference of the nerves be accepted, we may yet be enabled to remove the difficulties in the way of admitting such an objective character. The true difference between the perception of force and other sensations will then lie not in the process by which the phenomenon is apprehended, but in the nature of the phenomenon apprehended. We may thus have an apprehension of an objective external reality—the same reality which underlies the phenomena of dynamics. The principle of least action may perhaps explain the directive character of vital and voluntary processes.

Psychology.**Binet.**

106 *The Psychology of Reasoning.* By Alfred Binet. Chicago: The Open Court Publishing Co., 1899. pp. 191. Price 3s. 6d. Presented by the Publisher.

This is a translation from the second edition of Binet's well-known book. The argument, which is designed to show the close similarity of the processes of reasoning and perception, is based on experimental researches in hypnotism. Conclusions based on such researches are now acknowledged by most to be of very doubtful validity owing to the great danger of unconscious suggestion, but no indication is given in this edition of any change of attitude in this respect. The book might also have been brought up to date in other respects; thus the conclusions on p. 46, stated to be very important for Binet's theory, are based on an interpretation which is now generally acknowledged to be erroneous. Nevertheless, the book is very interesting and suggestive. Anthropologists will probably be chiefly interested in the account of the various types of mental imagery, of which M. Binet was one of the first to recognise the importance. The translation has been well done.

W. H. R. R.

Psychology: Child Study.**Warner.**

107 *The Nervous System of the Child.* By Francis Warner, M.D. London: Macmillan and Co., 1900. 8vo. pp. xvii, 233. Presented by the Author.

This book deals with the physical and mental hygiene of the child. It is founded on the extensive researches which the author has made on the abnormal signs accompanying mental defects in children, and is concerned to a large extent with the means by which the defects may be remedied. There are some interesting chapters on the training useful for developing the senses and the elementary mental processes, which should be very useful and suggestive to those who have to do with both normal and defective children. It follows that the book is of practical rather than of scientific interest, but incidentally contains much that may interest the anthropologist.

W. H. R. R.

Child Study.**MacDonald.**

108 *The Experimental Study of Children.* By Arthur MacDonald. Washington, 1899. pp. 214. (From U.S. Education Report, 1897-8.)

This book consists of two chapters from a report of the United States Bureau of Education. The first part is taken up with an account of researches carried out by the author or under his superintendence. Measurements of the head, of strength of grasp, of tactile and thermal sensibility, and of sensibility to pain were

made by Mr. MacDonald on 1,074 Washington children, including coloured children, and the results of these measurements are considered in relation to the nationalities of the children and their abilities in various studies. Unfortunately very few details are given of the methods employed, so that it is very difficult to judge of the value of the observations, but so far as one can gather, the methods appear to have been somewhat rough, and in some cases almost certainly inadequate.

In another investigation, observations on height, sitting height, weight, and circumference of head were made by teachers on 16,473 white children and 5,457 coloured children, and these measurements are considered in relation to the age, sex, mental ability, and sociological condition of the children. The results form a huge mass of detail put together without adequate criticism, and it is extremely difficult to assign the proper value to any of the author's conclusions. A few of the conclusions which are of most anthropological interest may, however, be given, though they must be accepted into reserve.

Dolichocephaly was found to increase as mental ability decreased, dull children tending to be dolichocephalic; the circumference of the head was found to increase as mental ability increased; children of the non-labouring classes were found to have larger heads, greater height, sitting height, and weight, and greater tactile and thermal sensibility than children of the labouring classes; the former also showed greater ability in their studies, but had a higher percentage of sickliness; boys were found to have larger heads than girls, but the latter were more sensitive to touch and heat; the girls were superior to the boys in their studies.

In the comparison of white and coloured children, some interesting, and in some cases surprising, conclusions are given. Coloured girls were found to have a larger circumference of head than white girls, the circumference being slightly larger in the coloured girls than in the coloured boys. White children were found to be taller than the coloured children, while the sitting height of the former was still more in excess, *i.e.*, white children had relatively long bodies. The coloured children were found, by the author's method of testing, to be much more sensitive to heat than white children.

A large mass of detail is given on the ability of the different classes of children in different studies. The children were arranged in those classes as bright, average, or dull, according to the opinions of their teachers. It is in the results so obtained that the most surprising conclusions of the author are to be found. It is, I think, generally believed that the children of negro races do very well at school up to a certain age, beyond which they cease to improve, or may even intrograde. Mr. MacDonald finds, however, that the proportion of bright coloured children increases with age (up to the age of sixteen), while in white children the percentage of brightness decreases except in the mechanical exercises of drawing, manual labour, and penmanship.

From a perusal of some of the tables, it seems as if the coloured children were distinctly superior to the white children in average mental ability; thus 46 per cent. of the coloured boys and 69 per cent. of the coloured girls are entered as bright in all studies, while the corresponding figures for boys and girls of American parentage are only 51 per cent. and 45 per cent. respectively. In the subject of arithmetic 54 per cent. of the coloured boys and 60 per cent. of the coloured girls are noted as bright, while only 44 per cent. of the boys and 37 per cent. of the girls of American parentage are so classed. In what is probably the most advanced of the studies for which data are given, *viz.*, algebra, the superiority of the coloured children appears to be even more marked.

In order to appreciate these somewhat startling results correctly, one would like to give rather more critical consideration than is given by the author to the methods of collecting the results, the personalities of the teachers from whose opinions these statistics are derived, and other possible factors which may have influenced the inquiry.

The book also contains a valuable *résumé* of researches on children both from America and Europe, a useful account of apparatus which may be used in the experimental study of children, and a good bibliography of child study. Notwithstanding its deficiencies as a record of original work, the book should be extremely valuable to workers in this branch of anthropology.

W. H. R. R.

FOLKLORE.

Folklore: General.

Elworthy.

109 *Horns of Honour, and other Studies in the By-ways of Archaeology.* By Frederick Thomas Elworthy. London: Murray, 1900. 8vo. pp. 315, with plates. Presented by the Publisher.

Readers of Mr. Elworthy's earlier book, *The Evil Eye*, will know what to expect from this, the companion volume. He is a careful explorer of the by-ways of archaeology and folklore; he is a deep student of mediæval magic, and his knowledge of the contents of European museums is extensive. His main object has been to collect and sketch little-known charms and votive offerings, and it is one of the most valuable characteristics of his work that he has no preconceived theories, and prefers to leave his drawings to speak for themselves. This volume is principally occupied with the discussion of various horns and hands, but incidentally many forms of popular superstition are considered. His main purpose is to show that earlier forms of ornament are in the main prophylactic. The crescent, he thinks, was used as a protective amulet, and horns, "the outcome of the crescent, developed into a special mark of honour and dignity, which men adopted for their own destruction, as well as the symbol of the most potent protectors." He gives a number of remarkable illustrations of the hands decorated with various symbols which are scattered through the museums of Europe. He seems to be successful in proving that these are not generally *ex votos*; but rather magical amulets intended either as prophylactic or with an erotic significance.

Mr. Elworthy does not pretend to write a scientific treatise, and in some cases, as in that of his interpretation of Jacob's Ladder, his views have been already superseded by Dr. Smythe Palmer's monograph on "Jacob at Bethel." But he has done good service in collecting a mass of raw material for the use of folklore students, and to this extent his book with its excellent collection of illustrations may be safely recommended.

W. CROOKE.

Folklore: Animal Superstitions.

Thomas.

110 *Animal Superstitions and Totemism.* Communicated by N. W. Thomas to the Folklore Society, April 25th, 1900. Published in *Folklore*, xi, 3 (September, 1900), pp. 227-267. Presented by the Author.

Mr. Thomas intends to collect the animal superstitions of the whole of Europe, and prefaces his paper by an analysis of the beliefs and practices which we find or may expect to find. This is followed by an analysis of the points dealt with in the paper, which is mainly devoted to the sacro-sanctity of the animal and annual sacrifice at the present day in Europe. The explanation suggested is that these beliefs and customs are relics of a system of totemism. Opening with a recapitulation

of the Irish facts with which others have already dealt, Mr. Thomas points out in an appendix on quasi-totemic survivals that a large number of sagas and popular beliefs seem to be descended from totemism; among them the idea, frequently found on the continent, that the babies are brought by certain animals such as the stork, the crow, etc. This is followed by a list of sacrosanct animals and the localities in which they are taboo, especial stress being laid on the local character of the beliefs in question. The second half of the paper is devoted to the different forms of animal sacrifice still prevailing in Europe—the hunting of the wren, the “Hahnenschlag,” the killing of the first animal of a species seen in spring, etc. It is then shown that many of these animals were ritually eaten, in most cases by the local group (*i.e.*, the villagers in most cases), but in other cases by the kin only. Mr. Thomas conjectures that the latter is the older form of the custom. The eating of cakes in animal form is also referred to as a custom of the same class. The paper concludes with a short discussion of the origin and meaning of the games of Blind Man’s Buff and Cock Warning. These Mr. Thomas explains as relics of primitive sacrifices, in which human beings were perhaps offered in later times; in their original form the victim was an animal and the mark of this animal, worn by the sacrificer or perhaps by all the participants, accounts for the fact that Blind Man’s Buff is known all over Europe by names of animals—Blinde Maus, Blinde Eule, Blinder Bock, etc. The author of this paper then points out that there are other customs which we can best explain by supposing them to be relics of these sacrifices; among others Santa Claus seems to have been originally a sacrificing priest who went round to capture a victim. Female priestesses were probably not uncommon, which may explain the predominance of the female element in witchcraft.

Eclipses.

Lasch.

Die Finsternisse in der Mythologie und im religiösen Brauch der Völker, von Dr. Richard Lasch, in Horn (Niederösterreich). (*Archiv für Religionswissenschaft*, 1900, 97–152.) 8vo. Presented by the Author. 111

Dr. Lasch has compiled an interesting record of beliefs and practices connected with eclipses in all parts of the world. He has paid special attention to the myths current among savage or half-civilised tribes, and it is to be hoped that the modern travellers, on whom he mainly relies, are competent witnesses on this point. In view of the importance of Egypt in the history of astronomical science, it is perhaps to be regretted that the paper does not contain a fuller account of the ancient Egyptian myths about eclipses, and it would appear that in dealing with the children of Israel the author has unduly strained some passages of Scripture. Thus the standing still of the Sun and Moon at the bidding of Joshua is regarded as an eclipse, and the celestial catastrophe which, according to Joel, is to precede “the great and terrible day of the Lord” receives the same simple explanation. The evidence again for Greek myths about eclipses is both late and scanty, perhaps because the heavenly bodies always played a subordinate part in Greek mythology.

Much may be learned, however, from the facts which the author has collected about the beliefs of primitive peoples. Some of these seem strangely consistent with the true theory of eclipses. Thus the Central Australians are said to believe that solar eclipses are caused by the *periodically* recurring visits of an evil influence called Arungquiltha. This suggests the eighteen years cycle, but the Australian period is more likely to be an imaginary one. The natives of Central Celebes seem to have grasped a more important element in the theory. They regard the Sun as the husband of the Earth, and explain solar eclipses by his adultery with the Moon, who

on these occasions passes before him and conceals him. A similar idea appears in a beautiful myth of the Upper Palatinate, according to which the Sun and Moon are a married couple, who were parted on the bridal night. An eclipse means that they have for a moment come together again, but when the eclipse ends they are once more supposed to have separated.

Dr. Lasch devotes the last few pages of his paper to a classification of the myths, and to an attempt to trace their evolution. On the latter subject it is difficult to be convincing, but his theory is certainly not an improbable one. In dealing, however, with the widespread dragon-myth he fails to show how closely it tallies with the actual phenomena, by which it may have been directly suggested.

J. K. F.

Suicide.**Lasch.**

112 *Die Behandlung der Leiche des Selbstmörders.* By Dr. Richard Lasch. (From *Globus*, LXXVI, 4. Presented by the Author.) Describes the peculiar modes of disposing of the body of a suicide, which are found to prevail among different peoples, and discusses briefly the motives which lead to their adoption. Full references are given throughout to the original authorities.

Rache als Selbstmordmotiv. By Dr. Richard Lasch. (From *Globus*, LXXIV, 3. Presented by the Author.) Supplies an omission noted by the author in the essay of Steinmetz on *Suicide among Primitive Peoples* (*Am. Anthropologist*, vii (1894), 53-60), by collecting instances in which suicide takes place from the motive of revenge. Full references are given throughout.

J. L. M.

England: Folklore.**Boulton.**

113 *The Amusements of Old London.* By William B. Boulton. 2 vols. London: J. Nimmo, 1900. pp. xiii, 272, ix, 263. Price 30s.

This work is an attempt, says the author, to survey the amusements of Londoners during a period which began approximately with the Restoration of King Charles II and ended with the accession of Queen Victoria. It therefore covers a considerable period. It deals with the amusements of Londoners outside their homes, and the list is varied and is interesting chiefly as showing the development in the tastes of the people. It begins with a description of Hockley in the Hole, an establishment of renown which stood in what was afterwards Ray Street, Clerkenwell. Hockley was a theatre of the old type and provided amusement in the shape of bull and bear baiting, dog fights, and contests between gladiators armed with swords, cudgels, or quarterstaves, and miscellaneous entertainments now things of the past. In the last year of the seventeenth century the Grand Jury of Middlesex complained of the impudence of its "professors," who distributed their handbills to the sound of drums, in defiance of the king's trumpeter, who apparently had the monopoly of street music in those days. It is perhaps worth noticing in those days the audiences were willing to endure a long wait before the performances began. "Doors will be open at three and the masters mount at six," says one advertisement, the three hours of waiting before the fight began being spent inside the building, disputes and fights for places occurring during this wait. It would seem from Mr. Boulton's account that the fights with swords were less dangerous than they appeared. The chief object of the exhibition fight was apparently a slashing flesh wound which might produce a good show of blood. Curious, too, are the fights between women at the same place. Challenges were advertised and fights with gloves and swords arranged. Prize-fighters, with the cold steel, were at times assisted by their wives. In spite of the moral enormities of the

old amusements, Mr. Boulton ranks the danger to their exponents as much less than that of the players of a North Country football match of to-day.

The next chapter deals with the tea gardens of London, Spring Garden, Mulberry Garden, Vauxhall, Bagnigge Wells, places of outdoor amusement where eating cakes and drinking constituted one of the principal attractions. From Charles I onward a period of two centuries shows an almost unbroken continuance of *al fresco* entertainments in London. Spring Garden's attraction was a bowling green and "an ordinary of six shillings a meal." This is said to be the forerunner and model of the later gardens. The "ordinary" or "collation" was the great feature of the place. Spring Garden was a convenient halting-place for refreshment on the way to or returning from Hyde Park, where the promenade of the ring, the foot and chariot races were. Pepys mentions visiting Spring Garden with his wife and found things "to eat very dear." The tea gardens were numerous. White Conduit House in Pentonville had its own code of deportment. It was reckoned the mode there to tread on the skirt of the damsel whose acquaintance you wished to make, apologise for your clumsiness, and suggest an adjournment to an arbour for tea as amends. Here, too, Bartholomew, the proprietor in 1754, provided bats and balls for his customers to play cricket in the meadow adjoining. That these tea gardens encouraged the development of games of skill seems clear. Copenhagen House was famous for its fives. A story is told of the origin of fives here. The maid of the tavern, hailing from Shropshire, meeting an acquaintance from the same county, and talking over the game, a diversion of their native place, improvised a fives ball, made an appointment for a day later, and played a game against the end of the house which delighted the onlookers and so started the tradition of fives at Copenhagen House. The very gable where the maid and her friend played their historic game remained the theatre of the famous contests which followed.

Al fresco London, particularly Vauxhall, is represented as charming as it well could be. Many may even be inclined to think that in losing Vauxhall Londoners lost something not yet replaced. Marylebone Gardens in the reign of George III suggests a very pleasant flavour of more reasonable enjoyment. Here was an evening entertainment of good music while the quietly disposed and peace-loving public disported themselves among the ancient trees in the old garden of the Manor House. The "Masked Assemblies," the "play tables," and the "cockpit" are dealt with at some length. This old sport, which had lingered on almost into our own times, is well described by the quotation from Pepys's *Diary*, and particulars are given as to the care and preparation required in breeding the birds. From the cockpit to the play and the opera house is the next step. For this chapter Pepys and Evelyn, Steele and Addison, have been requisitioned, and Mr. Boulton, from the speculations of the two latter, considers the playhouse to have toned down considerably since the days of the former. The manners and customs prevalent at the theatres and the rise of the opera house and its monopoly and use by the upper classes as a kind of social club is recorded briefly.

In the second volume, when writing on the fairs the author comes to the conclusion that our present habit of leaving town in August is not only due to the fact that Parliament rises in the late summer or to questions of sport. The great fairs of the town were the great carnivals to which, in the dog-days, the common people of London rushed. The fairs followed each other in quick succession in Smithfield, Southwark, and Westminster. The fairs, Mr. Boulton considers, were religious in their origin, their development commercial, and their apotheosis an unrestrained indulgence in pleasure or license. The main attraction of Bartholomew's Fair were the dramatic

performances of the regular companies from the West, and it was only when the fair was shortened from fourteen days to three that the more varied attractions of wild animals and rope dancers became popular.

Athletics and games, as we know them, are hardly mentioned in the book, nor has Mr. Boulton attempted to explain the origin or development of any pastime from early custom or belief. The book is pleasant reading and contains a mass of information useful to the general reader, for whom the book has been compiled. The reproductions of contemporary engravings coloured by hand constitute the main attractions of these volumes. They are principally from well known sources. The book is not of scientific value.

A. B. G.

Folklore.

Thomas.

114 *Questions on Animal Superstitions.* By N. W. Thomas.

The following list of questions is an enlarged edition of the list which I have circulated largely in Europe. I shall be glad to receive answers, as complete as may be, addressed to me at 3, Hanover Square. Previous editions of the questions being in circulation, I have not inserted the new questions in their proper order but put them at the end; the arrangement is therefore more or less accidental. The locality, tribe, etc., should be given as exactly as possible.

1. What animals, birds, fish, insects, etc., are said to bring good or bad luck to those who see them? Is it unlucky to see animals (particularly young animals) before breakfast? What animals are said to foretell the birth of a child or its sex?
2. What animals are said to bring luck or ill-luck to the house in which they live?
3. What animals are said to foretell a death?
4. What animals are said to foretell the price of corn, the abundance or otherwise of the harvest?
5. Are the last ears known by the name of an animal? Do people say that an animal is running through the field when the wind blows over the corn?
6. Are birds or animals kept in captivity for luck, to drive away diseases, etc.? Are there any animals which it is considered unlucky to bring into the house? Are any special ceremonies to be performed when you see one of a species for the first time in the spring?
7. What bearing has the colour of the animal on its sanctity, the omens it gives, etc.? Are white animals specially sacred or lucky? Are animals with certain marks sacred or lucky? If so, what are the marks?
8. Are certain species respected locally, or by certain families, *i.e.*, is it forbidden to kill, eat, or touch them, or unlucky to see them or use their ordinary names? Is it believed that by killing an animal of a certain species a human being is killed?
9. Are certain animals eaten only once a year or eaten with special ceremony once a year?
10. Are certain species of animals hunted once a year or killed at popular festivals? Are any persecuted or beaten? Are any animals habitually killed, and for what reason? Are the eggs of certain birds taken and destroyed? If so, how?
11. Are animals or figures of animals carried round in procession, divided among the community, etc.? Are animals or insects sold at fairs once

- a year? Are they bought in order to be set at liberty? Are animals ever set at liberty with special ceremony?
12. Is a man believed to gain certain magical powers of healing, etc., if he eats the flesh of certain animals, touches them, or lets them die in his hand? At what age should this ceremony be performed?
 13. What animals are used in both medicine and magic, and for what purposes? Is any particular time of year especially suitable for killing the animals for this purpose?
 14. How is the sacrificial victim killed, *e.g.*, is it thrown from a precipice into the fire, etc.? Are animals ever killed by being thrown into the air and allowed to fall? Is the victim eaten? What is done with the skin, the skull, etc.? Are cakes made which are called by names of animals and made in the shape of animals? Are they made of any other material? Are they ever in the shape of or provided with whistles? Detail any usages connected with these figures.
 15. Are the souls of the dead believed to take the form of animals? Are they believed to inhabit the bodies of animals? What is believed to happen to the soul if the animal dies in which it is lodged? Are ancestors in animal form believed to protect the fields, etc.?
 16. Are witches, etc., believed to have the power of transforming themselves into animals? Are the familiar spirits of medicine men, etc., believed to be in the form of animals? Are they ever visible to ordinary men? Are wizards believed to send into the souls familiars in the form of animals to devour the living? How does a man become a wizard?
 17. Are certain families, etc., believed to be able to influence certain species of animals, to cure their bites, to be on friendly terms with them, etc.? Are any people believed to be specially indebted for their success, etc., to animals or species of animals?
 18. Are certain species of animals believed to assume human form in other lands, or to assume human form at will? Are any animals believed to be human beings under a curse?
 19. Are certain animals believed to bring the babies, and whence? Are children ever believed to be born without souls, and if so, how do they get them?
 20. Are stories of swan maidens or youths told, or of ancestors in animal form or with animals' ears, etc.? Are stories told of women giving birth to animals?
 21. Do animals figure in any way in birth, marriage, or burial ceremonies? What animals are eaten on these occasions? Are animals hunted, killed, etc., by the wedding guests or others? Do people appear at weddings disguised as animals? Do they imitate the movements or cries of animals? Are corpses exposed for animals to eat them? Is food put on the corpse for an animal to eat?
 22. Are heads or skulls of animals, horns, etc., either real or carved, fixed on the houses, in the fields, etc.?
 23. What animals are found as weather vanes and inn signs?
 24. Are there any games called after animals, in which animal disguises are worn, or in which animals are imitated? Are the movements or cries of animals ever imitated, and for what purpose? Do people ever disguise themselves as animals?

25. Are dead animals buried for superstitious reasons? Is an animal buried annually at the carnival, etc.?
26. Do people take oaths by certain animals? Describe the ceremony.
27. How far is the decorative art based on animal motives?
28. Is the body ever tatued or otherwise decorated with pictures of animals?
29. Are any ceremonies necessary in hunting certain species? Are the hunters tabu? Are the young hunters initiated?
30. What animals are tabu for (a) pregnant women, (b) the uninitiated, (c) those who have just been initiated, (d) warriors, (e) the whole tribe or clan?
31. Are idols made in the shape of animals, or half-animals, half-men? Are idols covered with the skin of the sacrificial victim? If so, how often? Are gods believed to assume or have the form of animals?
32. Is the life of a man believed to be bound up with the life of an animal? Can such a man be killed only by killing the animal? If not, what is the effect on the animal if the man is killed, e.g., by magic?

Folklore.

Cross-References.

115 Other articles in the present volume dealing with Folklore will be found under Nos. 76 (Malay Magic); 70 (Borneo); 85, 86 (Germany); 53 (Ontario).

MISCELLANEA.

Spiritualism.

Savage.

116 *Life beyond Death.* By Minot Judson Savage, D.D. (Harvard). 8vo. pp. 336. New York, Putnams. 1900. Presented by the Author.

The sub-title describes this book as "a review of the world's beliefs on the subject, a consideration of present conditions of thought and feeling, leading to the question as to whether it can be demonstrated as a fact: to which is added an appendix containing some hints as to personal experiences and opinions."

The question is on the whole soberly and fairly stated, and the author's own conclusions kept distinct and in small compass. It is a pity that no references are appended to the statements in the historical sections, and that no bibliography is given.

J. L. M.

Skin Marks.

Ling Roth.

117 *On Permanent Artificial Skin Marks: a Definition of Terms.* Communicated by H. Ling Roth to the Anthropological Section of the British Association for the Advancement of Science. Bradford, September 11th, 1900.

The marking of the skin in some permanent form is a very wide-spread custom. The Fuegians, Ashantis, some tribes in Central Africa, and the Chinese have no such custom, nor do the cultured races have it excepting in the case of the travelled and the eccentric. Whatever may have been the original ideas or chance circumstances which may have brought it into existence, ultimately its objective became manifold. Amongst Maori women it was as much a social obligation as a means of ornament; among the Maori men it was a sign of personal prowess as well as indicative of high birth; the chins of the Esquimaux girls are marked to show they have arrived at a marriageable age, while the Ainn women's lips are operated upon to show they are





1. MURIK TOMB, SURMOUNTED BY A SMALL HUMAN IMAGE TO WHICH A LIVE FOWL IS USUALLY TIED. *Photograph by C. G. Seligmann.*



2. SPRINKLING IMAGES OF BALLI PENYALONG WITH THE BLOOD OF A FOWL (p. 183, *cf.* Pl. XIV, 2). *Photograph by C. S. Myers.*



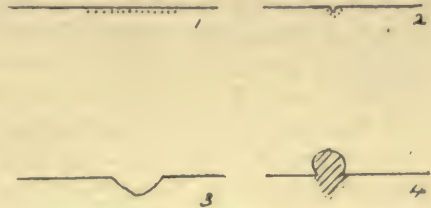
1. WOODEN MODEL OF A HORNBILL, MADE BY IBANS, AND USED IN PEACE-MAKING CEREMONIES. (*From a photograph by A. C. Haddon.*)



2. TAMA BULAN SPRINKLING IMAGES OF BALLI PENYALONG WITH THE BLOOD OF A FOWL (p. 176). (*From a photograph by C. S. Myers.*)

married; the Sinagaulos, of New Guinea, mark their breasts to show they have killed enemies; the Burmese and some Congo tribes are figured to protect themselves from evil spirits; other Congo peoples have skin designs to indicate the tribes to which they belong and so on. Whatever form the marking may take, it is intended to be permanent, that is to say, to last as long as the life of the individual, although occasionally to meet this view it has to be renewed.

It is to be expected that peoples living so far apart under very dissimilar circumstances should develop various methods of permanent skin marking. The Tasmanian, with his rude stone implement still in the early Palæolithic stage, could not produce what the Samoan could with his finished pricking-tool. Hence, quite apart from any question as to the evolution of designs we find extremely different methods followed in order to insure the desired permanency. There appear to be four such methods:—



DIAGRAMMATIC SECTIONS OF THE OUTER SKIN, TO SHOW THE DIFFERENT RESULTS OF THE FOUR METHODS DESCRIBED.

1. The Tahitian method first described by Lieutenant Cook and Mr. Joseph Banks under the designation *tattaou*, is the one so familiar to us to-day on the arms of our sailors and soldiers. In this method the skin was pricked by tapping with a piece of wood on an instrument having the shape of a miniature hoe with serrated edge, and the colouring matter was either pricked in at the same time or rubbed in immediately the pricker had done its work. The result was that when the operation was completed a series of blue spots in line were to be seen and when healed the skin resumed its original smoothness.

2. In New Zealand, besides making use of a pricker in a manner similar to that followed in Tahiti, the Maories employed a miniature adze-like instrument with a cutting edge like that of a very narrow chisel; this chisel was, like the pricker, driven into the skin by tapping. The result, however, was not the same for instead of the series of fine holes, dots under a smooth skin, the result was a series of continuous shallow grooves said to have been deep enough to bed a pin in. In this operation, therefore, in which pigment was likewise used, the margins of the wounds inflicted did not heal evenly with the surface of the skin, but the grooves remained for life. The natives call this work *moko*, a word which was first made known to Europeans by Mr. Joseph Banks, the companion of Lieutenant Cook.

3. Similar to the *moko*, but with grooves deeper and wider and generally without the insertion of any pigment (the Fantis and Accras are sometimes with and sometimes without pigment) is the skin deformation of the West African who probably carries the incisions into the true skin and not merely into the deep layers of the cuticle. This is done with a knife, bone, or hard wood chisel and not by tapping a chisel as was done by the Maori.

4. Finally we have those curious raised marks of the Tasmanians, Australians, and Melanesians generally, of the Central Africans, and, I believe, of German students. In this case the cuts are made with sharp-edged stones or special cutting instruments and are for a period continually re-opened, or irritated by the insertion of vegetable juices, sand, etc., hence an abnormal amount of reparative action takes place and they do not heal naturally as a healthy concave scar, but develop, instead, into nodulous growths, sometimes of considerable size.

From the description of the four methods it will be seen they are very distinct

from one another, yet in spite of this distinctness both eminent travellers and anthropologists speak of them in indefinite terms. Generally speaking they are all called by the one name "tatuing." Sometimes a distinction is made and we have the words "scar tatuing," "raised cicatrices," "*cicatrices saillantes*," but there has been up to now, practically with few exceptions, no definite nomenclature followed in describing the various methods of skin deformation. Even the editors of the *Anthropological Notes and Queries*, third edition, make no proper distinction between the methods: the word "tatuing" is made to cover both tatuing and amoko, and the word "cicatrice" is apparently intended to cover the third and fourth methods, although the reference to the third method seems to be only alluded to indefinitely by the word "incision." Miss Buckland divides skin marking into cicatrices and tatu marks, while in Joest's celebrated work I am unable to find any classification. Dr. Deniker, following Dr. Bazin, divides the marks into "tatuing by incision" and "tatuing by puncture," but this naming besides being an incorrect use of the word tatuing does not sufficiently explain the differences in the four methods above described. All this is very unsatisfactory and I venture to think the distinct differences shown merit a special name for every one.

The two first named processes having already each a name, *tatu* and *moko*, of native origin and distinct meaning, should be retained. For the third method I would suggest the word *cicatrix*. It may be objected that there is very little difference (I am not referring to any supposed similarity of design) between the second and third methods described, but when we consider their distinct places of origin, that one has probably been evolved from tatuing while the other has not, and also that the one is a more delicate operation than the other it is better to treat them as distinct methods. For the fourth method I would suggest the well known pathological term *keloid*. The above four terms, viz., *tatu*, *moko*, *cicatrix*, and *keloid* are all easily inflexed, can be used as verbs and have the advantage of being adaptable as technical terms to the French, German, or Italian languages and so can become of international use. By their means, we shall understand at once what a traveller intends, and the incorrect and misleading application of the word *tatu* will cease.

Hawaii: Featherwork.

Brigham.

118 *Memoirs of the Bernice Pauahi Bishop Museum of Polynesian Ethnology and Natural History.* Vol. I, No. 1. *Hawaiian Featherwork.* By William T. Brigham. 4to. pp. 82, and 15 plates. Honolulu, 1899. Presented by the Author.

This monograph is the first work issued from the Bishop Museum Press. Professor Brigham is to be congratulated on the exhaustive nature of its contents and the excellence of the illustrations, which number 115 in the text and 15 plates, two of which are coloured.

The use of feathers, he says, as a personal adornment is widely spread among native races, so that whichever way the inhabitants of the many groups scattered over the Pacific Ocean entered that area, they would most probably bring some knowledge of featherwork with them.

Professor Brigham begins by showing the means by which the feathers were obtained on the Hawaiian Islands, and gives a list of the birds which furnish them; he then goes on to make the fullest extracts from the earlier voyages that can throw any light on the subject. Beyond these accounts very little information about Hawaiian featherwork can now be obtained, as the art has so long ceased to be practised.

The various articles coming under the title of featherwork are in turn each fully described and as full a list as possible of all known specimens given. These articles consist of *leis* or strings of feathers worn in the hair, or in later times about the neck; *kahilis*, or plumes of feathers used as royal insignia; *ahuula*, cloaks or capes worn on state occasions by people of high rank; *mahiolo* or helmets designed for protection as well as ornament; images of the god *kukailimoku* represented by a grotesque human head, consisting of a featherwork covering on a basket-work foundation; together with a few other specimens such as a temple oracle or *anuu*, an interesting Cook relic in the Hof Museum at Vienna; and two mat-like objects in the British Museum (Plate VI), the origin and locality of which is very doubtful. Professor Brigham thinks that if these are Hawaiian, they might possibly have been used as mats on which the offerings to the idol were placed.

With a Director as energetic as Professor Brigham, and one so well versed in the ethnography of the Pacific Islands, we shall look forward with real pleasure to further contributions. J. E.-P.

Hawaii: Museum.

Brigham.

Bernice Pauahi Bishop Museum, Honolulu, Hawaiian Islands. By Professor Brigham. Honolulu, 1900. 8vo. pp. 79. **119**

Under the heading of "Occasional Papers," Professor Brigham, as Director of the above museum, has just issued his second annual report for the year 1899. Although the museum has, since its foundation in 1889, been twice enlarged to accommodate its ever growing collections, once by the addition of the large Polynesian Hall, yet at the end of 1898 it was found necessary to make arrangements for more than doubling its then present size. This last addition, which is now nearly completed, is due to the generosity of Mr. Bishop and is intended to contain the Hawaiian collections, as well as a large workroom for photographic purposes, and for the arrangement of large casts descriptive of Hawaiian life, and of models of Kilanea and of an ancient temple (*heiau*).

This gives some idea of the rapid growth of this institution under the able directorship of Professor Brigham.

That portion of the report devoted to ethnology contains illustrations of the more important acquisitions during the past year, also an interesting paper (illustrated) on "The Mat Sails of the Pacific," by John F. G. Stokes, assistant in the museum. Another assistant, Mr. Allen, furnishes a paper on "The Ray Skin Rasps from the Gilbert Islands," also with an illustration. J. E.-P.

Proceedings.

Anthropological Institute.

A Summary of the Proceedings of the Anthropological Institute of Great Britain and Ireland (continued from *Miscellanea*, 1900, No. 10.) **120**

Huxley Memorial Lecture, November 13th, 1900.—In place of an Ordinary Meeting of the Institute, a Special Meeting was held on the above date in the Lecture Theatre of the Museum of Practical Geology in Jermyn Street, when the Right Honourable Lord Avebury, D.C.L., LL.D., F.R.S., delivered the first Huxley Memorial Lecture.

The Chair was taken at 8.30 p.m. by Mr. C. H. Read, F.S.A., President of the Institute.

Lord Avebury delivered his lecture on "Huxley: the Man and his Work," which will be found printed in *Nature*, vol. lxiii, pp. 92, 116 ff.

The President presented to Lord Avebury the Huxley Memorial Medal in platinized silver.

Sir John Evans, K.C.B., ex-President of the Institute, moved a cordial vote of thanks to Lord Avebury for his lecture. Sir Henry H. Howorth, K.C.I.E., seconded the motion, which was put and carried by acclamation.

Lord Avebury briefly replied, and the Meeting adjourned.

121 *Extraordinary Meeting, November 22nd, 1900.*—Mr. W. Gowland, F.S.A., in the Chair.

Mr. D. Randall-MacIver read a paper "On the Berbers of Algeria, and their connections with Prehistoric Egypt."

Mr. Anthony Wilkin exhibited, in illustration of the paper, a large series of lantern slides from photographs taken by himself, and added a few comments on the paper. The paper was discussed by Mr. Myres and Dr. Garson. A vote of thanks was proposed, and carried unanimously.

122 *Ordinary Meeting, November 27th, 1900.*—Mr. C. H. Read, F.S.A., President, in the Chair. The Minutes of the Meetings of June 12th, November 13th, and November 27th were read and confirmed.

The election of the following Fellows was announced:—Professor W. Ridgeway, M.A., Caius College, Cambridge, Messrs. W. W. Skeat, M.A., Cambridge, N. C. Macnamara, 13, Grosvenor Street, W., E. C. S. George, C.S.I., Upper Burma, and Captain Stanley S. Flower, Cairo.

The President described certain objects exhibited on behalf of Mr. Alfred Sharpe, C.B., H.B.M. Commissioner of Nyasaland, namely:—

- (1) A wooden stool supported by a carved figure of a woman in native style, showing characteristic headdress and prominent keloid scars, from Angoni Land.
- (2) A double bell of iron, without clappers, used to announce the approach of travellers to a village.
- (3) A perforated stone implement of hammer-like form.

The thanks of the Meeting were expressed to Mr. Sharpe for his interesting exhibit, a further account of which, with illustration of No. 1, will be found in *Man*, 1901, No. 39, Plate D.

Professor E. B. Tylor, D.C.L., F.R.S., read extracts from a paper by Mr. J. Paxton Moir, of Hobart Town, on "Stone Implements from Tasmania," and exhibited a number of specimens. The paper, which is printed in the current volume of this *Journal* (vol. xxx, p. 257), was discussed by Mr. H. Balfour, Dr. Garson, Mr. Oldfield Thomas, and the President. Dr. Tylor replied. A vote of thanks was proposed to Dr. Tylor, and to the author of the paper, and was carried unanimously.

123 *Ordinary Meeting, December 11th, 1900.*—Mr. C. H. Read, F.S.A., President, in the Chair. The Minutes of the previous Meeting were read and confirmed.

The election of the following Fellows was announced:—Messrs. A. W. Withers, 21, Lichfield Road, Kew Gardens, and V. F. Bryce, 47, Duke Street, St. James's.

The Secretary read a list of the books presented to the library since the last Meeting of the Institute.

On behalf of Dr. R. W. Felkin, the President exhibited and described a number of weapons from the south-west side of Lake Tanganyika.

Mr. J. W. Crowfoot, M.A., read his paper on "Survivals among the Kappadokian Kizilbash (Bektash)," which was illustrated by lantern slides, and is printed in the current volume of this *Journal* (vol. xxx, p. 305). The paper was discussed by Sir Charles Wilson, Sir Thomas Holdich, Dr. Garson, and Mr. Gomme. The President proposed a vote of thanks to Mr. Crowfoot for his paper, which was carried unanimously.

Switzerland: Physical Anthropology.

Pittard.

Étude de diverses séries de crânes anciens de la vallée du Rhône (Valais.) Eugène Pittard, Neuchâtel, 1899. 124

This monograph is one of a long series which is rendering our knowledge of Swiss craniology both extensive and peculiar. Although racial admixture has occurred in Switzerland as elsewhere in Central and Western Europe, records are preserved in the ossuaries of the mountain valleys in a state of purity unequalled in other countries. M. Pittard has studied 422 skulls from various villages in the upper Rhone valley, constituting one of the most extensive series available up to the present time. The author divides his monograph into two parts, the first containing observations of an ethnological character, the second those having a more special bearing on comparative anatomy. The skulls naturally divide themselves into two series, a brachycephalic with characters attaching them to the Celto-Ligurian type, and a dolichocephalic of Kymric or Germanic affinities, crania of intermediate characters being of course also found.

At first sight it seems tempting to suppose that an original brachycephalic population of Rhaetic Celts was invaded by a dolichocephalic people, the Burgundians, Alemanni, or Franks, as occurred in the Rhine valley, but M. Pittard carefully points out that it is not possible to say at present what is the origin of the dolichocephals found mixed with the larger number of brachycephals, nor even which of the two were the first occupants of the Rhone valley.

The following are the author's conclusions:—

1. The ancient skulls of the Rhone valley are for the most part brachycephalic, leptoprosopic, mesorrhine, and megaseme.
2. By all their characters they are to be assigned to the Celtic type.
3. They have given to this district its present ethnic type.
4. The brachycephalic skulls have a longer face, larger subcerebral angle, and smaller parietal and occipital regions than the dolichocephalic skulls found in this district.
5. The weight, cranial capacity, diameters, curves, and auricular angles are absolutely greater in male than female skulls.
6. Relatively the female skulls have a larger capacity than the male. The female skulls are relatively larger in the frontal and occipital regions, the male in the parietal regions.

Full details are given in the text of the measurements and characters of all the skulls described, and full references are given to similar observations on the crania of other races. J. S.

Africa: Livingstone.

Roy. Geogr. Soc.

125 *A Memorial to Dr. Livingstone*: abstract of a communication printed in the *Geographical Journal*, xv, pp. 636-9 (June, 1900).

An interesting relic of the great African explorer has recently come into the possession of the Royal Geographical Society, by whose courteous permission the photograph which is appended is reproduced. The tree at the foot of which Livingstone's heart was buried by his faithful native followers in 1873, was found not long ago by Mr. Weatherly to be in a precarious condition; and the Royal Geographical Society at once took steps to secure the removal of the section of the tree which bears the commemorative inscription, for safe keeping in this country. Through the good offices of Mr. Alfred Sharpe, the British Commissioner in Nyasaland, and of Mr. Robert Codrington, the representative of the British South Africa Company in the



Bangweulu region, the section of the tree has been transported to England, and is now to be seen in the house of the Royal Geographical Society. The inscription runs as follows:—

“David Livingstone. Died May 4, 1873. Chuma. Souza. Mniassere. Uchopere.”

Subsequently the spot where the tree stood has been marked by an obelisk of concrete, twenty feet high, surmounted by a cross, and adorned on its four faces with commemorative inscriptions. Representations of this monument, and of the tree before it was cut down, will be found in the *Geographical Journal* on p. 636 and p. 638 respectively.

J. L. M.

Tasmania.

Ling Roth.

The Aborigines of Tasmania. By H. Ling Roth; assisted by Marion E. Butler and Jas. Backhouse Walker, with a chapter on the Osteology by J. G. Garson, M.D. Preface by E. B. Tylor, D.C.L., F.R.S. Halifax: King and Sons, 1899. Second edition, revised and enlarged, with map. 8vo. pp. XIX, 228, CIII. Price 21s. nett. **126**

Mr. Ling Roth has made good use of the time that has elapsed since the appearance of the first edition of the *Aborigines of Tasmania*. The work has not only grown considerably but has also been subjected to a thorough-going revision. Among the additions are a map, two new vocabularies, and an alphabetical Tasmanian dictionary to the vocabularies, which greatly increases their value. In the first edition Bonwick's work was virtually ignored. Bonwick seems to have printed a good deal of material without making sure that it referred to the Tasmanians. Mr. Ling Roth now deals with Bonwick's statements seriatim, and shows that we have reason for mistrusting what he tells us. Increased knowledge has caused Mr. Ling Roth to mistrust some of his own earlier information; as a result he has withdrawn two illustrations of basket-work which he now believes to be of Australian origin. In view of the attention which has been given to the subject of late the chapter on stone implements is of special interest. It seems clear that ground stone implements were known to the Tasmanians; why they adhered to the ruder form is not clear; if it was from a disinclination to expend much time on the preparation of them we may also infer that the forms which they did use were not highly specialised, and that an elaborate classification of specimens rests on an unsafe foundation.

If there is one point on which we should be disposed to quarrel with Mr. Ling Roth it is the size of the index. It is really an excess of modesty to give only four pages to index a book of this size and character. In other respects the book is excellently got up. We have observed one misprint that has been passed over; p. 182, line 3, for *affirmity* read *affinity*. N. W. T.

Physical Anthropology.

Stratz.

Die Schönheit des weiblichen Körpers. By Dr. C. H. Stratz. Achte Auflage. Stuttgart, 1900. 8vo. pp. xii, 268. **127**

This little book, which is admirably got up and illustrated, is dedicated by its author to mothers, doctors, and artists—to mothers because it professes to show the ill effects of tight lacing; to doctors because some of the effects of disease on the human figure are depicted in it. In selecting examples for illustration the author has used great artistic judgment; disease, in this country at any rate, does not often leave its victims with their beauty so little impaired. The dedication to artists is of course natural, the greater part of the book being taken up with photographs from nature of celebrated models of varying nationality posing in artistic attitudes, each being supplemented by a canon of proportion based on the figure represented. The body as a whole and its component members receive individual and detailed consideration in the text, which contains much valuable information as to the canons adopted at different times by all well recognised schools of art. On the whole, as the author seeks after the ideal rather than the average, the book should be of greater use to the artist than to the anthropologist. F. C. S.

Celebes: Ethnography.**Dresden Museum.**

128 *Publicationen aus dem k. Ethnographischen Museum zu Dresden: XII.* W. Foy, *Schwerter von der Célèbes See.* Dresden, 1899. fol. pp. iv, 17, with 6 plates.

Dr. Meyer may well be proud of the series of monographs published under his direction. The gratitude he has earned is, at any rate in England, not wholly unmixed with envy at his happy lot. English officialdom, so far as it condescends to recognise ethnography at all, regards it as an inconvenient appendage to the British Museum, not on any account to be encouraged. And as for encouraging inquiries into such frivolous subjects as the mental constitution of the peoples it is called upon to rule, the very idea is enough to freeze the blood of the average civil servant. Other countries are more enlightened. They support Bureaus and Museums for the systematic study of mankind; they encourage those who come in contact with native races to record all that comes to their ken; and in Germany more than one officer in the navy has received a course of instruction in Anthropology to fit him to do his work of observation thoroughly when his opportunity comes. England hardly knows how mediæval it is. We can hardly hope for an enlightened government, but our national pride might forbid that other nations should be permitted, with infinitely inferior opportunities and resources, to outstrip us and put us to shame. We can only hope that the day will soon come when Dr. Meyer's handsome series will be permitted to have a rival in English official publications. N. W. T.

Ethnography.**Dresden Museum.**

129 *Abhandlungen und Berichte des k. Zoologischen und Anthropologisch-Ethnographischen Museums zu Dresden, Festschrift, 1899, No. 3. Zur Timor Ornamentik,* von W. Foy und O. Richter. 4° pp. 14, with 38 blocks in the text. No. 5. *Die Volks-Stämme Neupommerns,* von R. Parkinson. 4° pp. 14, and one plate.

The first of these contributions is a discussion of a single element in the ornamentation of Indonesian peoples—a continuous pattern found on bamboo boxes in Timor, of which the Dresden Museum possesses a large and valuable series. No work more useful or necessary can be imagined than the production of monographs of this nature, distinguished as they are by thoroughness and sane judgment. The author believes that the basis of the pattern is the widely distributed lizard ornament; they recognise that further enquiry is necessary in two directions, firstly as to the occurrence of this pattern on other objects and secondly of the meaning and types of Timor ornament in general.

Mr. Parkinson explains the racial relations of the tribes of Neu-Pommern. He distinguishes two tribes in the Gazelle peninsula; one of these is also found in New Mecklenburgh, the remaining tribes of the islands are related to their New Guinea neighbours. Mr. Foy, who has since published some of the ethnographical material in the *Publicationen* (vol. xiii) of the museum, discusses in a note the bearing of Mr. Parkinson's information on views put forward by other writers. The plate is as usual excellent. N. W. T.

Canada.**Bourinot—Rimmer.**

130 *Canada under British Rule, 1760-1900.* By Sir John G. Bourinot, K.C.M.G., LL.D., Litt.D. Cambridge Historical Series. 8vo. pp. xii, 346. 8 maps. Price 6s.

Memorandum on the Legal Status of British North American Indians. Colonial Reports. Miscellaneous, No. 15. pp. 22. Price 1½d.

After an introductory chapter on the French régime, lasting from 1534 to 1760, Sir

John Bourinot, whose high competence to deal with the subject is universally admitted, traces in a wonderfully interesting manner the beginning of British rule from the foundation of Nova Scotia to the passing of the Quebec Act, the effects of the American Revolution and the action of the United Empire Loyalists, the gradual development of representative institutions up to the breaking out of the war between Great Britain and the United States in 1812, the evolution of responsible government in the quarter of a century which followed, and the new era of colonial government which set in during the first thirty years of the Victorian Era. He then describes the evolution of confederation from its first proposal by Chief Justice Smith, of Quebec, in 1789, to its successful accomplishment in 1867, and the progress of the Dominion of Canada to the present time, concluding with a view of Canada's relations with the United States, and her influence in Imperial councils since the separation of those States from the mother country. Two useful appendices supply a comparison in parallel columns of the constitution of the Dominion of Canada with that of the Commonwealth of Australia, and some bibliographical notes on the most accurate and available books and essays on the history of Canada. We must dissent entirely from one passage, in which Sir John Bourinot allows himself to speak of "Tom Paine, a mere adventurer." He cannot have read the life of that remarkable man, with all the evidence of his self-sacrificing character and far-seeing judgment accumulated by Dr. Moncreux Conway, when he referred to Thomas Paine in these terms. There is little of direct anthropological interest in the volume, but it contains many incidental notices of the native tribes that are worthy of consideration.

The Imperial House of Commons having asked for information in regard to the disabilities and restrictions imposed upon British Indians in Canada, Lord Minto referred the matter to a Committee of his Privy Council, who instructed the Superintendent-General of Indian Affairs to prepare the information desired. He furnished in answer a memorandum drawn up by Mr. Richard Rimmer, the Law Clerk of the Department. From this it appears that in the province of Ontario 20,000 Indians hold not less than 1,144,000 acres of land; in Manitoba and the North-West Territories 21,000 Indians have 3,080,000 acres; in British Columbia 25,000 Indians have 714,000 acres; in Quebec 11,000 Indians have 215,000 acres, and elsewhere in the Dominion 33,000 Indians have 93,000 acres, making a total for the whole Dominion of 100,000 Indians and 5,240,000 acres of land. A portion of these reserves in Ontario, extending over 675,000 acres, was appropriated in 1784 by the Crown to the Confederacy of the Six Nations in recognition of their loyalty during the American War. The law in relation to Indians is contained in the Revised Statutes of 1886, cap. 43, and has since been several times amended. It contains provisions by which an Indian and his unmarried minor children may be "enfranchised, and cease in every respect to be Indians of any class within the meaning of the Act, or Indians within the meaning of any other Act or law." By sect. 114, the celebration of certain festivals, dances, or ceremonies whereat presents are made, or human or animal bodies are mutilated, is made an indictable offence. By the Criminal Code, everyone who steals or unlawfully injures or removes any image, bone, article or thing deposited in or near any Indian grave is guilty of an offence. There is no statutory provision against an Indian as such being elected or sitting and voting as a member of Parliament. Indians enjoy certain exemptions from the game laws.

E. W. B.

Museums: Leiden.

Schmeltz.

131 *Rijks Ethnographisch Museum te Leiden: Verslag van de Directeur, etc.* s'Gravenhage, 1899. (Director's Reports (a) Jan. 1st-Sept. 30th, 1898; (b) Oct. 1st, 1898-Sept. 30th, 1899.) pp. 34. 8vo. Frontispiece and Plates. Presented by the Author.

These Reports contain a full descriptive list of acquisitions for the period which they cover, arranged in geographical order; together with a summary of the administrative work of the year.

The first Report, for the period Jan. 1897 to Sept. 1898, is accompanied by sixteen photographic plates, representing the following objects, numbered successively and described in the text:—*Java*—(1) Wajang dolls, of plaited grass, (2) a *sirih*-shears of damascened iron with geometrical ornament in silver wire. *Bali*—(3) kris, with human hair covering on the handle. *Dammar Islands*—(4) wooden figure of a goddess, on carved background. *Tenamber Islands*—(5) woman's hair-comb, with carved ornamentation. *Japan*—(6) votive model of a house, with furniture, etc., (7) temple ornaments, (8) temple frieze, representing (8) dragons among clouds, (9) musical instruments among clouds. *China*—(10) model gate of honour. *Tibet*—(11) mask of the king-devil, (12) bronze figure of the founder of Lamaism, (13) figure of Avalokita, (14) Bhairava lamp. *Congo State*—(15) tobacco pipe in form of an animal, (16) wooden cup carved as a human head. *Benin*—(17) carved elephant's tusk, (18) bronze cock very finely modelled, (19, 21, 22) bronze sockets for elephants' tusks, in the shape of human heads, (20) bronze plaque with figure of an armed man, rosettes in background, (23, 23a) two-pronged butt-pieces and ornamental points of spears, perhaps from Benin, but not certainly. *Guatemala*—(24) waist-cloth, embroidered with figures of men and animals. *British New Guinea*—(25) wooden dance-shield with grotesquely conventional human figure. *Admiralty Islands*—(26) gourd lime-box, (27, 28) carved handle-ends of wooden spatulæ, (29, 30) combs of various patterns, (31) wooden bowl, (32, 33) long-handled ladles of cocoanut, (34) obsidian knives, (35) thrusting weapon carved with human figures with double point of *Trigon*-spines. Masks (38, 40) from *New Hanover* (36), *New Ireland* (37), house-carving, *Kaan Island* (38), *Sir Charles Hardy Island* (39), and *Solomon Islands* (40); from the *Solomon Islands* come also (41, 42) prow ornaments, (43) fetish figure, and (44) specimen of carving, a grotesque human figure, like those on the paddles.

In the second Report, the frontispiece, representing Mus. Ethn. Lugd. Bat. (Inv. 417/82.101.102), is not described. Plate I represents a winged dragon-figure of wood, coloured red and gilded, from *Bali* (Inv. 1216). Plate II shows (1) a ceremonial axe with "anchor shaped" blade of ground stone, lashed to a short handle from *Brazil* (Inv. 1184/1, see p. 14, and 2-3), two rude children's dolls made of clay, hair, and wood, with long club-like bodies, knob-heads with round eyes inlaid, and voluminous mop of hair, from *East Africa* (Inv. 1198/16-17: see p. 10-11). Plate III represents (1) a large wooden bird with outspread wings, the upper side ornamented with seeds and feathers set in pitch; said to be used as a head-dress in a dance, from the south coast of Dutch *New Guinea* (Inv. 1222/3, see p. 15); (2) a bamboo vessel for palm wine with a cover in the shape of a bird's head, of which the beak forms the spout; from *Lombok* (Inv. 1208/1, see p. 6); (3) another wooden bird like Pl. III, 1, given in 1896 by Baron van Hoëvell as a "prow ornament," but probably, like III, 1, a dancing head-dress (see p. 16, and *Int. Arch. f. Ethn.*, X 18), from *Torres Straits*.

J. L. M.

Abyssinia.

Wylde.

Modern Abyssinia. By Augustus B. Wylde. London, Methuen, 1901. 8vo. pp. 506, with map. Price 15s. nett. **132**

This is a book which contains a great deal of information, but unfortunately very little of it bears directly on anthropology. The author has been for a quarter of a century more or less associated with the country about which he writes, and as vice-consul for the Red Sea was in an advantageous position for the collection of information. He seems, however, like too many others, to have regarded the mental life of the races with whom he has come in contact as a thing of no interest; he positively apologises for having found superstitious stories amusing, and tells us he regards superstitious persons as unreliable and partly insane. However admirable this attitude may be *à priori*, a strong-minded person of this type is hardly likely to bring home valuable material for the student of comparative religion. It must not be imagined, however, that Mr. Wylde's opinions are an outcome of mere vulgar prejudice; his remarks on missionaries and the native clergy are enough to clear him of any suspicion of insular pride.

Of anthropological matter there is, as has been said, but little. We learn that among the Yejju no one is thought to have arrived at man's estate who has not killed a human being, and until he has done so a man may neither braid his hair nor wear ornaments nor enter into the married state. There is some interesting information also about the Axum ruins, where coins and bronze figurines seem to be waiting for some one to pick them up. Mr. Wylde's notes and measurements of the monoliths and sculptures were unfortunately lost; he has, therefore, little to say on the subject. He suggests that the object figured in Layard's *Nineveh*, i, 125, described as a fircone is really a trungie or shaddock. Scattered about the book are a number of notes on the physical features of the various peoples of the country. The general reader will find the book full of interesting information and eminently readable.

N. W. T.

Civilisation.

Cunningham.

An Essay on Western Civilisation in its Economic Aspects. Mediæval and Modern Times. By W. Cunningham, D.D. Cambridge Historical Series. pp. xii, 300. 3 maps. Price 4s. 6d. **133**

This volume is a sequel to one dealing with the same subject in ancient times, comprises books 4, 5, and 6 of the complete work with an introduction, and begins with art. 71. Though it deals with a subject that possesses great interest for the anthropologist, it is not treated upon an anthropological method. The author gives little weight to the evidence of continuity in human affairs, which appears to anthropologists to be the real key to the problems of the history of mankind. We believe that nothing happens in history or in economics without a definite cause or that is not led up to by a long chain of circumstances gradually preparing the way for it. Nature produces no sudden original outbursts of new discovery. We do not, therefore, follow the author in his inference that the establishment of the Roman obedience in ecclesiastical affairs introduced new ideals into economics; nor that the Reformation of religion was in any sense a reversal of those ideals. So far as it had any relation with economics at all, it cannot be doubted that the Roman obedience exacted far too high a price for any supposititious benefits it conferred; and the Reformation, so far as it was economic, was a refusal to pay that price. Dr. Cunningham, who is Vicar of Great St. Mary's, appears to use the word "Christendom" as a synonym for the Roman obedience. He affects to look back with regret to the time

when the secular business of government was mainly in the hands of clerical functionaries, and says, oddly enough, "This attempt to control the life of man in all its aspects is of the very essence of the Christian religion. *Homo sum, et nihil humani a me alienum puto*, is the Divine Word to the world." It is certainly amusing to find the line that brought down the house in a comedy of Terence represented as being a "Divine Word," and used as a justification for a method of priestly government that no age and no people has ever yet found tolerable.

When Dr. Cunningham's work is viewed apart from his strange ecclesiastical proclivities, it is in all respects admirable. In Book VI, which deals mainly with the industrial progress of the last century, he is on firm ground. He there states briefly but clearly the conclusions which are developed at length in his excellent book on the growth of English industry. The work also embodies the substance of lectures delivered by him at Harvard University in 1899.

Switzerland: Physical Anthropology.

Schürch.

134 *Neue Beiträge zur Anthropologie der Schweiz.* Dr. Phil. Otto Schürch. Berne. Schmid und Francke, 1900.

The materials on which this book has been based are to be found in the museums and ossuaries of Central Switzerland, whence so much information with regard to the past history of Europe has been from time to time derived and published in such series of essays as these of Dr. Schürch. The author divides his monograph into five sections, each part being distinct in itself, yet in close association with the remainder. The first section deals with modern skulls of Central Switzerland obtained from Berne, Hasle, Altdorf, and neighbouring burial-grounds. In this evidence is produced that 85 per cent. of the modern Swiss are brachycephalic and only 2 per cent. or less dolichocephalic; similarly 80 to 90 per cent. are leptoprosopic and only 10 to 15 per cent. chamæprosopic. The second section deals with the correlation of the different facial indices proportions as met with in the successive historic eras and among the varied ethnic elements of the district studied by the author. The third section, on the proportions and relations of the alveoli and teeth in prehistoric and recent skulls, contains much matter of general anatomical as well as anthropological interest, the jaws and teeth of all races being dealt with on a comparative basis. The next part, on the wearing down of the teeth both in prehistoric and modern times, is of great importance from both pathological and sociological standpoints in view of questions as to liability to disease and the effects of a varied dietary on the teeth. In the fifth section certain prehistoric skulls and lower jaws are described in detail with full measurements and excellent photographic reproductions, many being of the natural size.

F. C. S.

INDEX.

NOTE.—The numbers in ordinary type refer to the papers; the numbers in Clarendon type are the reference numbers of *Miscellanea*. For collected references, see especially *Africa, America, Archæology, Asia, Europe, Oceania, Physical Anthropology, Religion, Sociology, Technology*.

A.

- Aberdeen, East, Physical Characteristics, 104ff.
- Abnormalities, Cranial, 141.
- Accessions to Museums, 14ff.
- Adalia, Figurine from, 251ff.
- Adams. Western Rajputana States (*rev.*), 63.
- Adoption, 76.
- Adults in E. Aberdeen, Physical Characteristics, 104ff.
- Ægean Ware, 202.
- Affinities, Racial, of Aberdeen, 122.
- AFRICA—
- Abyssinia, Modern (*rev.*), 132.
- Algeria. Exhibition of Algerian and Kabyle objects, 16.
- Algerians, Modern, and Ancient Egyptians, 100.
- Bantu Languages. Grundriss einer Lautlehre der Bantu Sprachen (*rev.*), 26.
- Central Africa. In Dwarf Land and Cannibal Country (*rev.*), 28; Northern Nyasaland (*rev.*), 27.
- East Africa. Bertas, Arms of, 52; Cheloids of, 52; Clothing of, 52; Currency, 54; Dwellings of, 53; Notes on the, 50ff; Physical Characters of, 51.
- Galla, Notes on the, 50ff. Cloth-
- ing of, 50; Goldwashing among, 51; Hair-dressing of, 50; Huts of, 50.
- Vumba, History of, 275ff.
- Egypt, Ancient, Writing in, 153ff, 18; Anthropometrical Work in, 95ff; Carved Slate, 23; the Carved Slates from Hierakonpolis, 22; Collection of Stone Implements in the Mayer Museum, 21; and Cyprus, Relations between, 207; Die Flexion des ägyptischen Verbums, 19; Flint Bracelets, Plate A; the Life of Rekhmara (*rev.*), 24; Perforate Humeri, 20; Prehistoric Period in, 100; Redemption of Egypt (*rev.*), 25. *v.* also Nagada, Punt.
- Livingstone, Memorial to, 125.
- Morocco, Ginn and Fairies, 17.
- South Africa. The Boer States: Land and People (*rev.*), 29; On the Imperfection of our Knowledge of the Black Races, 30; Knysna, Notes on Caves near, 45.
- West Africa. Jukos, Ligor, Wuruku, and Tangale, 31.
- Agricultural Labourers, Pigmentation of, in Aberdeen, 110.
- Agriculture of Gallas, etc., 51, 53.
- Algerian Collection, MacIver, D. R., 16.

Algerians, Modern, and Ancient Egyptians, 100.
 Alphabet. The Story of the Alphabet (*rev.*), 33.
 Alphabetic Signs, Origin of, 154.
 Altar-stone in Stone Circles, 67, 69.
 AMERICA—
 Aboriginal Zoötechny (*rev.*), 52.
 Alaska. Property Marks of Alaskan Eskimo, 56.
 Amerind—a Designation for the Aboriginal Tribes, 51.
 Canada. Report of the Ethnographic Survey Committee, 55; Under British rule (*rev.*), 130; Status of Indians, 130.
 Eskimo, Notes on, 139.
 Nootka Sound. Extracts from the Diary of Mr. James Strange, 58.
 N.W. Coast, Copper Shield from, 54.
 Ontario. The Paganism of the Civilised Iroquois, 53.
 Vancouver. Floats for Alluring Salmon, 57.
 AMERICA (CENTRAL)—
 Costa Rica. Besuch bei den Chirripó- und Talamanca-Indianern (*rev.*), 59.
 Mexico. The Cordillera of Mexico and its Inhabitants (*rev.*), 60.
 AMERICA (SOUTH)—
 Colombia. Note on a Stone Figure, 61.
 Amulets, 31, 64.
 Ancestor Worship, 286, 31.
 Animal, Sacred, 31.
 Animal Superstitions, Questions on, 114.
 Animism of the Iroquois, 265.
 Anniversary Meeting, 1.
 Anthropological Journal, Portuguese, 91.
 Anthropological Lantern Slides. Regulations, 11.
 Anthropometrical Work in Egypt, 95ff.
 Anthropometry. Criminal, 161ff; Rivers, Dr. W. H. R., 12; Abyssinian, 54; Berta, 54; Galla, 54.
 ARCHEOLOGY : v. *Ægean*, Altar-stone, Armour, Art, British Museum, Bronze, Chariots, Clay ware, Cup markings, Cyprus, Figurine, Hierakonpolis, Iron,

Oak, Owl-faced, Pillars, Scandinavia, Stone Circles, Swords, etc.
 Archæology. Assam, 65.
 Armitage, Mrs., Yorkshire Earthworks, 82.
 Armour, Cypriote, 213.
 Arms and Weapons, Berta, 53; Cypriote, 218; Scandinavian, 90.
 Arrow Heads from Knysna Cave, 47.
 Art, Cypriote, 199; Evolution in, 18; Earrings, 315; Maori, 41; Japanese, 68; Ornamentation, 251ff.
 Arts of Life. Aboriginal American Zoötechny, 52; Borneo, 73; Juko, etc., 31. v. Technology.
 ASIA—
 Adalia, Figurine from, 251ff.
 Ainu Inao, 69.
 Assam. Archæology, 65; Lushai Names, 66.
 Assyrian Scenes on Cypriote Objects, 210.
 Bektash, 305ff.
 Borneo. Animal Cults, 70; Ethnography, 72; Stone Age, 71; Textiles, 73.
 Burma. Hkoung beht set, 64.
 Celebes, Swords, 128.
 Cyprus, Mycenean, 199ff; Bibliography, 62.
 India. Rajputana States, 63.
 Japan. Sacred Trees, 43; Art, 68; Religion, 69.
 Kappadokia, Kizilbash of, 305ff.
 Lushai, 66, 67.
 Malacca, 74-78.
 New Pomerania, Tribes, 129.
 Timor Ornamentik, 129.
 Assembly, National, Place of, 30.
 Aston. Japanese Gohei, 69.
 AUSTRALASIA (see OCEANIA).
 Axes, Stone, from Pitcairn Island, 83ff.

B.

Balance Sheet, 3.
 Balfour, H., on Tasmanian Stone Implements, 259.
 Baltic Thunder-God, 26; Tree-sanctuary, 31.

Baumann, Oscar, 15.
 Beddoe, J. Anthropology of W. Yorks, 83; Vagaries of Kephalic Index, 93.
 Bell, A. M. Palæoliths, 80.
 Bertillon System, 165.
 Bibliography of Cyprus, 62.
 Binet, A. Psychology of Reasoning (*rev.*), 106.
 Biró. Beschreibender Catalog der Ethnographischen Sammlung (*rev.*), 44.
 Black Ware, 255.
 Boas, F. Property Marks of Alaskan Eskimo, 56.
 Bone Implement from Knysna Cave, 47.
 Bornholm, 87.
 Boulton, W. B. Amusements of Old London (*rev.*), 113.
 Bourinot. Canada under British rule (*rev.*), 130.
 Boyle, D. Paganism of Civilised Iroquois, 263ff.
 Bracelets, Flint, from Egypt, Plate A.
 Brigham. Hawaiian Featherwork, 118; Museum Report, 119.
 British Association, Ethnographic Survey, 55.
 British Museum Excavations in Cyprus, 199ff.
 British New Guinea, Stone Clubs of, 221ff.
 Bronze Age in Cyprus, 219.
 Bronze and Iron Ages, Order of Succession, 16.
 Bronze Foundry at Enkomi, 215.
 Bronze Pins, Cypriote, 203.
 Bronze Vessels, etc., in Scandinavia, 89.
 Brown, J. Allen. Stone Implements from Pitcairn Island, 83ff.
 Burial Customs, 85, 31, 59, 74.
 Buschan, G. Bornholm (*rev.*), 87.

C.

Cairn Custom, 44.
 Cannibalism, Tangale, etc., 31; Nootka, 58.
 Canoe Head, Maori, in British Museum, 40.
 Capacity, Cranial, of Mori-ori, 144.
 Cave as Sanctuary, 40.

Cave Dwellers, South African, 46ff.
 Chadwick, H. M. Oak and Thunder-God, 22.
 Characters, Craniological, of Eskimo, 132ff.
 Chariots, Types of, 210.
 Chatham Islands (*v.* Mori-ori).
 Cheloids among Bertas, 52.
 Chief's Dwelling and Temple, 30.
 Child, Nervous System of, 107.
 Child Study, Abnormalities, 99.
 Children, Crania of Eskimo, 134; Experimental Study of, 108.
 Chirripó- und Talamanca-Indianern von Costarica (*rev.*), 59.
 Chisels, Stone, 85.
 Civilisation, Western (*rev.*), 133.
 Classification of Cards (Metric System), 165.
 Classification of Stone Circles, 69, 70.
 Clava Cairn (*fig.*), 64.
 Clay Ware, 255.
 Clodd, E. The Story of the Alphabet, 33.
 Clothing of Bertas, 52.
 Clothing of the Gallas, 50.
 Clothing, Tangale, 31.
 Clubs, Stone, 85.
 Cobham. Bibliography of Cyprus (*rev.*), 62.
 Coptic Script, 157.
 Corfu, 88.
 Correction, 42.
 Council, Report of, 4.
 Cradle, 318.
 Cranial Markings, 94.
 Craniology, Eskimo, 125.
 Craniology of Mori-ori, 141ff.
 Crichton-Browne, Sir J. On Metric Systems, 196.
 Criminals, Metric System of Identification, 161ff.
 Cross references, Physical Anthropology, 103; Folklore, 115.
 Crowfoot, J. W. Kappadokian Kizilbash, 305ff.
 Cunningham, D. J. Microcephaly, 100; Sacral Index, 95.
 Cunningham, W. Western Civilisation (*rev.*), 133.

Cup-markings and Stone Circles, 65.
 Currency of Bertas, 54.
 Cyprus, Mycenaean, 199ff.

D.

Dalton, O. M. Note on a Copper Shield, 54; Note on a Stone Figure from Colombia, 61.
 Dances, Iroquois, 267; Nootka, 58.
 De Claparède. Corfu (*rev.*), 88.
 Demotic Script, 157.
 Deniker, J. Races of Man (*rev.*), 98.
 Descent in Male Line, 80.
 Descent of Man, 97.
 Description of Prisoners, 171.
 Determinatives, Egyptian, 155.
 Diagrammatic Representation of Indices, 96; Plates XIII-XVI.
 Disease, 74; Magic against, 74.
 Divination, 307; 31.
 Diwan, Election of, in Vumba, 278ff.
 Dixon, A. F. Cranial Markings, 94.
 Dodona, Sanctuary of, 36.
 Donar, 25.
 Draught-box, Cypriote, 210ff.
 Drinking Custom, 315.
 Druids, 34.
 Duckworth, W. L. H. Crania of Mori-ori, 141ff; Contribution to Eskimo Craniology, 125ff; on Crania Collected in Rotuma, 46; Malay Somatology, 75.
 Dwellings of Bertas, 53.
 Dwellings of Gallas, 50.

E.

Ear-rings, 315.
 Eclipses, 111.
 Edge-Partington, J. Correction, 42; Feather-Mats in the British Museum, 47; Floats for Alluring Salmon, 57; Genesis of the Maori Scroll-Pattern, 41; Note on a Pataka in the Auckland Museum, Note on a Carved Canoe-Head in the British Museum, 40; Object of Unknown Use from the Solomon Islands, 45; Shell Adze from Ambrym Island, 49; Note on a Wommera, 35.

Egyptian Language, Origin of, 158.
 Egyptians, Prehistoric, Origin of, 99.
 Elworthy, F. T. Horns of Honour (*rev.*), 109.
 Endogamy, 313.
 England. Amusements of Old London (*rev.*), 113.
 Enkomi, Finds at, 202ff.
 Erman, A. Die Flexion des ägyptischen Verbums (*rev.*), 19.
 Errors in Identification, 163.
 Error, Mean, in Metric System, 187.
 Eskimo Craniology, 125ff.
 Eskimo, Notes on Customs, etc., 139; Teeth of, 134.
 Ethnographic Survey Committee. Report, 55.
 Ethnography of Borneo, 72; of Malacca, 74; of New Pomerania, 129; Races of Man (*rev.*), 98.
 EUROPE—
 Aberdeen, Racial Elements in, 121.
 Crete. Prehistoric, 89; System of Writing, 90.
 England. Palæolithic, 80; Physical Type, 83; Silchester Excavations 81; Yorkshire Earthworks, 82.
 Germany. Folk Medicine, 86; Folklore, 85.
 Scotland. Somatology, 84, 104ff; Stone Circles of, 56ff.
 Switzerland, Physical Anthropology, 124, 134.
 V. also Ægean, Bornholm, Clava, Corfu, Dodona, Great Britain, Lithuanian, Roman, Romove, Scandinavia.
 Evans, A. J. Cretan Script, 90; Mycenaean Cyprus, 199ff.
 Exchange of Sisters, 79, 82.
 Exogamy, 78.
 Eyes, Standards of Colour, 106.

F.

Fairies, Ginn and, 17.
 Feather-Mats, Notes on some in the British Museum (Plates F, G), 47; 118.

Felkin, R. W. Oscar Baumann, Ph.D.,
Obituary, 15.
Fertility, 81.
Fibulae, Cypriote, 204.
Figurine, primitive, from Adalia, 251ff.
Finger-prints, 161ff; Classification of,
101; Method of Taking, 174; Roman,
102.
Fire, Kindling of Sacred, 37; Perpetual,
27; Sacred, 34.
Fishermen of Aberdeen, Pigmentation,
110.
Flints, Unclassified Worked, 299ff.
Flower, Sir W., Tribute to the Late, 18.
Folklore, 113; Animal Superstitions,
110; Amusements of Old London,
113; Germany, 85; Horns of Honour,
109. *v.* also Religion.
Folk Medicine, Germany, 86.
Foramen Magnum, 133.
Forbes, Dr. H. O. Collection of Stone
Implements made by Mr. H. W.
Seton-Karr, 21.
Forged Stone Clubs, 243.
Form, Metric (fig.), 168.
Fortification, 31.
Fooster, Sir M. Physiology (*rev.*), 96.
Foy, W. Schwerter von der Celébes See
(*rev.*), 128; Zur Timor ornamentik
(*rev.*), 129.
Frazer, J. G. Criticisms of Views on
Oak-God, 38ff.
Frequency Curve, 186.
Future Life, Iroquois Idea of, 271.
Fysh. Tasmania: Primitive, Present,
and Future, 38.

G.

Galton, F. On Metric System, 195.
Garsia, Colonel. On Metric System,
194.
Garson, J. G. Finger-prints, 101;
Metric System of Identification, 161ff;
On Tasmanian Stone Implements, 261.
Genealogical Method of Collecting Statis-
tics, 74ff.
Germans, Thunder-God of, 25.
Ginn and Fairies, 17.

God, Word for, in Indo-germanic, 39.
Gold Ornaments, Cypriote, 205.
Gold-washing among Gallas, 51.
Gray, J. Physical Characteristics in E.
Aberdeen, 104; Somatology of W.
Aberdeen, 84.
Great Britain, Metric System of Identi-
fication in, 161ff.
Great Spirit, Iroquois Ideas on, 266.
Griffith, F. Ll. System of Writing in
Ancient Egypt, 18, 153ff.
Groves, Sacred, 29, 31, 32.
Guardian Tree, 30.
Gurdon. *Aśwagrāntā* (*rev.*), 65.

H.

Haddon, A. C. Ethnography of Borneo,
72; Stone Age in Borneo, 71; Stone
Clubs of British New Guinea, 221ff;
Textile Patterns of Sea Dyaks, 73.
Haidar-es-Sultan, 307.
Hair-dressing of Gallas, 50.
Hair, Standard of Colour, 107; Red,
114.
Hare Superstition, 315.
Hartland, E. S. On the Black Races
of the Transvaal, 30.
Hartog, M. Interpolation in Memory,
104.
Hassan-dede, 308.
Head, Eskimo, form of, 127ff.
Head-hunting, Tangale, 31.
Height, Standing, in Aberdeen, 120; of
Mori-ori, 149.
Henderson, J. Northern Nyasaland, 27.
Hero-worship, 307, 313.
Hierakonpolis, Slates from, 22, Plate B.
Hieratic Script in Egypt, 157.
Hieroglyphs, 153ff.
Hittite Chariot (fig.), 211.
Hogarth, D. G. Prehistoric Crete, 89.
Hollis, A. C. Notes on History of
Vumba, 275ff.
Hose, C. Animal Cults of Sarawak,
70.
Howarth, O. H. The Cordillera of
Mexico and its Inhabitants, 60.
Hunting, Tangale, 31.

Index.

I.

- Identification, Methods of, 162ff; Metric System of, 161ff.
 Ideographic Writing, 154.
 Idols, Many-headed, 33; Tree Stems as, 33; Colombian, 61; Juko, 31; Nootka, 58; Pitcairn Island, 85.
 Iles, G. Flame, Electricity, and the Camera, 34.
 Incest, 313.
 Incised Pottery, 251.
 Indices, in Aberdeen, 117; Correlations of, in Aberdeen, 121; in Egypt, 99; Cranial, of Eskimo, 126ff; Diagrammatic Representation of, 96; female, in Egypt, 99; of Kizilbash, 318; Nasal, in Aberdeen, 118; in Egypt, 99; of Mori-ori Skulls, 145ff; Sacral, 95; Vagaries of Cephalic, 93.
 Inscriptions, Cypriote, 216.
 Inspiration, 308.
 Intermarrying Groups, 78.
 Iron Age in Cyprus, 218.
 Iron and Bronze Ages, Order of Succession, 16.
 Italy and Scandinavia, Earliest Communications, 89ff.
 Ivory Carvings, Cypriote, 209.

J.

- Janissaries, 309ff.
 Japan, Sacred Trees in, 43.
 Japanese Art (*rev.*), 68.
 Jühling, J. Tiere in der Volksmedizin (*rev.*), 86.
 Juju, 31.
 Jukos, Notes on the, 31.
 Jupiter and the Oak, 35.

K.

- Kappadokian Kizilbash, 305ff.
 Keane, A. H. The Boer States: Land and People, 29.
 Keltic Thunder-God, 26; Tree-Sanctuary, 33.

- Kephalic Index, 93.
 King, Assassination of, 31.
 Kingsley, Mary. Obituary, 13; The Proposed National Memorial to Mary Kingsley, 14.
 Kingsley Society, 14.
 Kingston, H. D. R. Notes on Knysna Caves, 45.
 Kinship, 77ff.
 Kists in Stone Circles, 57.
 Kitchen Midden in S. Africa, 46; Tasmanian, 257.
 Kizilbash, 305ff.
 Kneeling Position of Figurine, 252.
 Knysna, Caves near, 45.
 Koettlitz, R. Notes on the Galla, 50.
 Kris, Malay, 77.

L.

- Laidlaw, F. Malay Anthropology, 75.
 Land Tenure, Juko, 31.
 Lang, A. Ginn and Fairies, 17.
 Langhús, 28, 30.
 Language. Die Flexion des aegyptischen Verbums (*rev.*), 19; Bantu, 26; Theory of Grammar, 79; Mangareva Dictionary, 48; The Inter-relation of Melanesian, Papuan and Polynesian, 50; Vocabulary, Nootka Sound, 58; Prince William's Sound, 58.
 Lantern Slides, regulations, 11.
 Lasch, R. Die Finsternisse (*rev.*), 111; Suicide (*rev.*), 112.
 Legge, F. The Carved Slates from Hierakonpolis, 22.
 Lewis, A. L. The Stone Circles of Scotland, 56ff.
 Libyan Chief (*fig.*), 100.
 Libyans, 100.
 Lithuanian Cults, 27, 31, 34.
 Livingstone, Dr., Memorial to, 125.
 Ligori, 31.
 Lloyd, A. B. In Dwarf Land and Cannibal Country, 28.
 Local Exogamy, 78.
 Louis, H. Malay Kris, 77.
 Lushai Language, 67; Names, 66.

M.

- Macalister, Professor A. Perforate Humeri in Ancient Egyptian Skele-
tons, **20**.
- Macdonald, A. Experimental Study of
Children (*rev.*), **108**.
- MacDougall, W. Animal Cults of Sara-
wak, **70**.
- MacIver, D. R. On Metric System,
194; Recent Anthropometrical Work
in Egypt, 95ff.
- McGee, W. J. Amerind, **51**.
- Magic, Juko, **31**; Malay, **74**, **76**.
- Magousaioi, 314.
- Malay Anthropology, **75**; Ethnography,
74; Kris, **77**; Magic, **76**; Metal-
work, **78**.
- Male Line, Descent in, **80**.
- Males, Eskimo, Indices of, **129**.
- Maori Carvings, Plate E.
- Maori Scroll Pattern, Genesis of, **41**.
- Marks on Body, Description of, **172**;
Tribal, **52**, **31**.
- Marriage Ceremony, in Vumba, **278**;
Customs, Juko, **31**; Kizilbash, **313**;
Torres Straits, **78**.
- Mason, O. T. Aboriginal American
Zoötechny, **52**.
- Meetings of the Institute (*v.* Proceed-
ings).
- Meinhof, C. Grundriss einer Lautlehre
der Bantu Sprachen, **26**.
- Metal-work, Malay, **78**.
- Metric Form (*fig.*), **168**.
- Metric System, Errors, **178**; of Identifi-
cation, **161ff**; Outfit, **175**.
- Microcephaly, **100**.
- Mimicry of Animals, **58**.
- Moir, J. P. On the Stone Implements
of the Natives of Tasmania, **36**,
257ff.
- Montelius, Professor O. Earliest Com-
munications between Italy and Scan-
dinavia, **89ff**.
- Mori-ori, Skeletal System of, **141ff**.
- Morocco. Ginn and Fairies, **17**.
- Morris, C. Descent of Man (*rev.*),
97.
- Mourning in Vumba, **280**.

- Museums, Accessions to, **14ff**, **131**;
Auckland, Pataka in, **40**; Bremen,
Maori, Carvings, **39**. Publications:
Bernice Pauahi, **118**, **119**; Dresden,
128, **129**; Hungarian, **44**; Leiden,
68, **131**.
- Music, **58**, **59**.
- Mycenean Cyprus, **199ff**.
- Myres, J. L. Figurine from Adalia,
251ff.
- Mythology, Eclipses, **111**.

N.

- Nagada, Skull from (*fig.*), **100**.
- Names, Exchanging, **77**.
- Names not Pronounced, **75**.
- Names of Dead not Tabu, **80**.
- Nasal Index in Egypt, **99**.
- Nasal Indices in Aberdeen, **118**.
- Neolithic Implements, Tasmanian, **258**.
- Newberry, P. E. "The Life of Rekh-
mara," **24**.
- Nomenclature. Amerind, **51**.

O.

- Oak and Thunder-God, **22ff**; Why sacred,
41.
- Obituary. Baumann, Oscar, **15**; Mary
Kingsley, **13**.
- Object of Unknown Use from the Solo-
mon Islands, **45**.
- OCEANIA (AUSTRALASIA)—
- Gambier Islands. Mangareva Diction-
ary, **48**.
- Hawaii. Note on some Feather-
Mats in the British Museum, **47**;
Bernice Pauahi Bishop Museum,
Memoirs, Hawaiian Featherwork,
118; Report, **119**.
- Mori-ori, **141ff**.
- New Guinea. Beschreibender Catalog
der Ethnographischen Sammlung
Ludwig Biró-s, **44**; Classification
of Stone Clubs, **221ff**.
- New Hebrides. Note on a Shell Adze
from Ambrym Island, **49**.
- New Pomerania, Tribes, **129**.

Index.

- New Zealand. Correction, **42**; Genesis of the Maori Scroll-Pattern, **41**; Pataka in the Auckland Museum, Carved Canoe-Head in the British Museum, **40**; Schnitzereien der Maori (*rev.*), **39**.
- North Queensland. Wommera, **35**.
- Pacific. Inter-relation of Melanesian, Papuan and Polynesian Languages, **50**.
- Pitcairn Island. Sculptured Rocks, **87**; Stone Images, **85**; Stone Implements from, **83ff**; Burial Custom, **85**.
- Rotuma. On Crania collected by Mr. J. Stanley Gardiner, **46**.
- Solomon Islands. Note on an Object of Unknown Use, **45**.
- Tasmania. Stone Age, **37**; Stone Implements, **36**, **257ff**; Tasmania: Primitive, Present, and Future (*rev.*), **38**; Aborigines of (*rev.*), **126**.
- Timor Group. Verslag eener reis in de Timor-groep en Polynesië (*rev.*), **43**.
- Ontario, Iroquois of, **263ff**.
- Oracles, German, **36**.
- Ornaments, Bronze, in Scandinavia, **89**.
- Outeniqua District, Caves in, **45**.
- Owl-faced Figures, **252**.
- P.**
- Palaeoliths, English, **80**.
- Parentage and Adoption, **76**.
- Pataka in the Auckland Museum, **40**.
- Pathological Variations in Mori-ori Skulls, **142**.
- Pelvic Indices of Mori-ori, **149**.
- Perforate Humeri in Ancient Egyptian Skeletons, **20**.
- Perkúnas, **27**, **32**, **34**.
- Perkuno, **26**.
- Perun, **27**.
- Petrie, Professor W. M. Note on a Carved Slate, **23**.
- Phonetic Elements in Writing, **154**.
- Phonograms, Egyptian, **155**.
- PHYSICAL ANTHROPOLOGY, **103**; Abyssinia, **54**; Berta, **54**; Egypt, **95**, **20**; England, **83**; Eskimo, **125ff**; Galla, **154**; of Kizilbash, **317**; Malay, **75**; Mori-ori, **141ff**; Crania from Rotuma, **46**; Switzerland, **124**, **134**; W. Aberdeen, **84**.
- Cranial Abnormalities, **141**; Development, **92**; Fertility, **81**; Foramen magnum, **133**; Form of head, **127**; Microcephaly, **100**; Obliteration of Sutures, **132**; Perforate Humeri, **20**; Pigmies, **75**; Scaphoid Skulls, **132**; Schönheit des Weiblichen Körpers (*rev.*), **127**; Skin Marks, **117**. (*v. also* Anthropometry, Eyes, Finger Prints, Index.)
- Physical Characteristics in E. Aberdeen, **104ff**; of Berta, **51**; of Wuruku, **31**.
- Physiology, **96**.
- Pigmentation in E. Aberdeen, **105**.
- Pigmies, **75**.
- Pillars, Sacred, **33**, **37**, **42**.
- Pine Tree, sacred in Japan (*fig.*), **43**.
- Pins, Cypriote, **203**.
- Pittard, Crânes anciens du Rhône (*rev.*), **124**.
- Planes, Magic, **74**.
- Pleiades and Agriculture, **294**.
- Polygamy, **79**.
- Pope-Hennessy, H. Notes on the Jukos, etc., **31**.
- Portugalia (*rev.*), **91**.
- Pottery: Black ware, **255**; Cypriote, **202**; Incised, **251**.
- Prayers, Iroquois, **267**.
- Prehistoric Crete, **89**.
- Presidential Address, **6**.
- Priest-king, **40**.
- Priests of Prussians, **32**.
- Proceedings of the Anthropological Institute, January-June, 1900, **2**, **120**.
- Progress of Invention. Flame, Electricity, and the Camera (*rev.*), **34**.
- Property Marks of Alaskan Eskimo, **56**.
- Prussian Cults, **26**, **31**, **32**.
- Psychology. Interpolation in Memory, **104**; of Reasoning, **106**; Perception of Force, **105**.

Punctured Ornamentation, 252.
Punt, Man of (fig.), 101; People of, 101.
Purification Ceremony, 74.

R.

Rain, Ancestor Prayed to for, 286.
Randall-MacIver (*v. MacIver*).
Read, C. H. Correction, 42; on Tasmanian Stone Implements, 261; Presidential Address, 6.
Red Hair in Aberdeen, 114.
Regulations for the Use of Lantern Slides, 11.
Rekhmara, Life of (*rev.*), 24.
Religion. Animal Cults, 70; Japanese Gobei, 69; of the Iroquois, 53; West African, 31.
RELIGION, Folklore and Magic, *v.* Altar Stone, Amulet, Animal, Burial, Cairn, Cave, Divination, Dodona, Donar, Eclipses, Eskimo, Fairies, Fire, Folklore, Future Life, God, Great Spirit, Groves, Hare, Hero, Idols, Inspiration, King, Magic, Mourning, Names, Oak, Oracles, Pine, Plant, Priest, Purification, Rain, Roman, Romove, Sacrifice, Sacrosanctity, Sky Deity, Suicide, Tabu, Temple, Thunder-god, Village, Well, White Dog, Zeus, etc.
Remeasurements (Metric System), 178.
Rivers, W. H. R. Genealogical Method of Collecting Social and Vital Statistics, 74.
Rocks, Sculptured, 87.
Roman Cults, 28, 35.
Roman Finger-prints, 102.
Roman Remains, Silchester, 81.
Romove and Dodona, 36.
Romove, Sacred Oak at, 32, 34.
Rosenhain, W. Malay Metal-work, 78.
Roth, H. Ling. Hkoung beht set, 64; Skin Marks, 117; The Aborigines of Tasmania (*rev.*), 126.
Royal Geographical Society. Livingstone Memorial, 125.

S.

Sacral Index, 95.
Sacrifice, 308.

Sacrifices, Human, and Thor, 24.
Sacro-sanctity of Animals, 31.
Salmon Floats from Vancouver Island, 57.
Samagitti, 32.
Sapper, K. Ein Besuch bei den Chirripó- und Talamanca-Indianern, 59.
Savage, M. J. Life beyond Death (*rev.*), 116.
Scandinavia and Italy, Earliest Communications, 89ff.
Scandinavia, Thor in, 22.
Scaphoid Skulls, 132.
Scarabs, Cypriote, 206.
Schmeltz. Japanese Art (*rev.*), 68.
Schmidt, P. W. Inter-relation of Melanesian, Papuan and Polynesian Languages, 50.
Schnitzereien der Maori (*rev.*), 39.
School Children, Aberdeenshire, Physical Characteristics, 104ff.
Schürch. Anthropologie der Schweiz (*rev.*), 134.
Schurtz, H. Schnitzereien der Maori aus dem Museum in Bremen, 39.
Scotland, Stone Circles of, 56.
Scraper from Knysna Cave, 47.
Script, Cretan, 90.
Search Cabinet, 165, 182.
Searches, Percentage of Finds, Metric System, 191.
Secondary Totems, 80.
Shakspear. Lushai Language, 67; Lushai Names (*rev.*), 66.
Shell Adze, Note on, 49, Plate H.
Shell-beds, S. African, 46; Tasmanian, 257.
Shell ornament from Knysna, 47.
Shell ornaments (fig.), 47.
Shinto temples, 44.
Skeat, W. W. Malay Ethnography, 74; Malay Magic (*rev.*), 76.
Skeletal System of Mori-ori, 141ff.
Skin Marks, Permanent Artificial, 117; Hkoung beht set, 64.
Sky Deity, Indo-Germanic, 40.
Slate, carved, Hierakonpolis, 23, Plate B.
Slavery in Vumba, 278.
Slavonic Thunder-God, 27.
Slavonic Tree Sanctuary, 32.

Index.

Smith, Toulmin. Mary Kingsley
Obituary, **13**.
Social Statistics, Method of Collecting,
74ff.
SOCIOLOGY : *v.* Adoption, Assembly, Can-
nibalism, Cave, Chief, Civilisation,
Currency, Descent, Endogamy, Ex-
change, Exogamy, Genealogical,
Incest, Intermarrying, King, Kinship,
Land Tenure, Local, Male, Marriage,
Parentage, Polygamy, Priest, Property,
Slavery, Social, Succession, Systems,
War, Wife, etc.
Soul, **77** ; Animal form of, **77**.
Spiritualism. Life beyond Death, **116**.
Standard of Colour, 106, 107.
Statistics, Genealogical Method of Col-
lection, 74ff.
Stature of Mori-ori, 149 (*v.* also
Height).
Steatopygia, 253.
Stokes, Sir G. G. Perception of Force,
105.
Stone Age, Borneo, **71** ; Tasmania, **37**.
Stone Axes, 300 ; from Knysna Cave,
47.
Stone Circles of Scotland, 56ff.
Stone Circles, Types of, 69 ; Kists in, 57.
Stone Clubs, Geographical Distribution
of, in N. Guinea, 241 ; of British New
Guinea, 221ff ; types of, 222.
Stone Images (Pitcairn Island), 85.
Stone Implements of the ancient
Egyptians, **21** ; from Knysna, 47ff ;
from Pitcairn Island, 83ff ; from
Tasmania, 257ff ; Types of Tasmanian,
258 ; of Tasmania, **36**.
Stones, Cup-markings on, 65.
Stopes, H. Unclassified worked Flints,
299ff.
Strange, Diary of Mr. James, **58**.
Stratz. Schönheit der weiblichen
Körpers (*rev.*), **127**.
Subsistence, Mode of, West Africa, **31**.
Succession in Murray Island, 77 ; in
Africa, **31**.
Suicide, **112**.
Sutures, Obliteration of, 132.
Swords, Bronze, in Scandinavia, 90 ;
Celebes, **128**.

Syllabary, Cypriote, 216.
Syria and Cyprus, Contact between,
207.
Systems of Relationship, 78.

T.

Taber, R. G. Notes on Eskimo, 139.
Tabu, None on Names of Dead, 80 ; on
use of Animals and Plants, **70, 77**.
Tachtadji, 312.
Tanarus, 26.
Tangale, Notes on the, **31**.
Taran, 26.
Tasmania, Stone Age in, **37** ; Stone
Implements in, 257ff.
Tau-Shield from N.W. Coast of America,
54.
Teeth of Eskimo, 134 ; of Mori-ori, 147.
TECHNOLOGY. Agriculture, 51, 53, 294,
31 ; Arms and Armour, 47, 53, 90,
213, **35 54, 77, 128** ; Carving, 210ff,
22, 39, 40, 41, 129 ; Clothing, **31**,
58, 59 ; Copper, **54** ; Feather work,
47, 118 ; Fortification, **31** ; Gold-
washing, 51 ; Hairdressing, 50 ; Hunt-
ing, **31** ; Huts, **31, 72** ; Iron and
Steel, **77, 78** (*v.* also Iron) ; Kris, **77** ;
Petroglyphs, 87 ; Pottery, 202, 251, **31** ;
Precious Metals, 205, **64, 78** ; Salmon
Floats, **57** ; Scarabs, 206 ; Shell work,
47, 257, **49** ; Skin Marks, **31, 117** ;
Stone Figure, **61** ; Stone Implements,
47, 83, 241, 257, 299, **21, 36**, Plate A ;
Textiles, **73** ; Throwing Sticks, 53 ;
Tindalo, **45** ; Trade, **58** ; Zootechny,
52. *v.* also Archæology, Art, Costa
Rica, Cyprus.
Temple, R. C. Theory of Grammar
(*rev.*), **79**.
Temple-Boys, 254.
Temple, Scandinavian, 28 ; Shinto, 44.
Ten Kate, H. F. C. Verslag eener reis
in de Timor-groep, **43**.
Textile Art, Borneo, **73**.
Thomas, N. W. Animal Superstitions,
110 ; Note on Nootka Vocabulary,
58 ; Questions on Animal Super-
stitions, **114**.

Thor, Attributes of, 24; Chief God of Scandinavia, 22ff.
 Throwing-sticks, Berta, 53.
 Thunder-God, Oak and, 22ff; and Oak, Association of, 34ff.
 Tindalo from Solomon Islands, Plate E., 45.
 Tocher, J. F. Somatology of W. Aberdeen, 84; Physical Characteristics in E. Aberdeen, 104ff.
 Tombs, Kappadokian, 307, 312.
 Totemism, 78.
 Totems, Secondary, 80.
 Trade, 58.
 Treasurer's Report, 2.
 Tree, Dwelling under, 32, 41.
 Tree-Sanctuary, Germanic, 28.
 Trees, Sacred, 30, 31.
 Tregear, E. Mangareva Dictionary, 48.
 Tribal Marks, 31.
 Trilateral Roots in Egypt, 158.
 Tumuli, Chambered, 62; and Stone Circles, 59.
 Turbeh, 307, 312.
 Turner, Sir W. Roman Finger-Prints, 102.
 Tylor, Professor E. B. On the Stone Age in Tasmania, 37; Stone Implements of Tasmania, 257ff.
 T'zitzikama District, Caves in, 45.

V.

Village, God of, 43.
 Vowels in Egyptian Writing, 154.
 Vumba, History of, 275ff.

W.

Walega, Galla of, 50ff.
 War, 31.
 Warner, F. Abnormalities in Children, 99; Nervous System of Child (*rev.*), 107.
 Waterston, D. Developmental Changes, 92.
 Wife's Relatives, Names of, not pronounced, 75.
 Weapons of Bertas, 52.
 Well, Sacred, 307.
 White Dog, Sacrifice of, 269.
 Wilkin, A. Algerian Collection, 16.
 Women of Prehistoric Egypt, Indices of, 99.
 Wommera, Note on, 35.
 Word-signs in Egyptian Writing, 155.
 Worsfold, W. B. The Redemption of Egypt, 25.
 Writing, System of, in Ancient Egypt, 153ff; in Ancient Greece, 90; Story of the Alphabet, 33; Syllabary, Cypriote, 216.
 Wuttke, A. Deutsche Volksaberglaube (*rev.*), 85.
 Wylde. Modern Abyssinia (*rev.*), 132.

Z.

Zeus and the Oak, 36.
 Zeus as Thunder-God, 27.

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NOTICE.

Each volume of the *Journal* published since 1899 contains the papers presented to the Institute between January and December of the calendar year; the minutes of the Annual Meeting in January, with the President's Address, and the Reports of the Treasurer and Council forming the introduction to each volume. The present volume, therefore, contains those papers which were presented between January and December, 1901; and opens with the President's Address delivered in January, 1901.

For convenience of reference, greater prominence is given to the number of a volume in continuation of the old demy octavo series, Vols. I-XXVII, than to its number in the new (royal octavo) series which began in 1898: Thus *i.e.* New Series Vol. I=Vol. XXVIII of the old series; and the current volume (Vol. XXXI) corresponds to N.S. Vol. IV.

CONTENTS.

	PAGE
Proceedings of the Annual Meeting of the Institute, with the Reports of Council and Treasurer	1
I. Presidential Address. By C. H. READ, F.S.A.	9
II. On the Ruins of Dhlo-Dhlo, in Rhodesia. By FRANKLIN WHITE, Esq. (With Plates I-V)	21
III. Maori Tatu and Moko. By H. LING ROTH	29
IV. The Yakuts. Abridged from the Russian of Sieroshevski, by W. G. SUMNER, Professor of Political and Social Science in Yale University, New Haven, Conn., U.S.A., and revised and completed by M. SIEROSHEVSKI	65
V. Cephalometric Instruments and Cephalograms. By J. GRAY, B.Sc. (With Plates VI, VII, VIII)	111
VI. Notes on the Manners and Customs of the Baganda. By the Rev. JOHN ROSCOE. [Communicated by J. G. FRAZER, 23rd April, 1901]	117
VII. The Japanese <i>Gohei</i> and the Ainu <i>Inao</i> . By W. G. ASTON, C.M.G. (With Plate IX)	131
VIII. Note upon the Natives of Savage Island, or Niué. By BASIL THOMSON	137
IX. Stories from the Southern New Hebrides, with Introduction and Notes. By SIDNEY H. RAY	147
X. Note on some American Parallels to European Agricultural Customs. By N. W. THOMAS, M.A.	155
XI. The Spirit of Vegetation. By E. TREGGAR. Communicated by J. G. FRAZER	157
XII. Notes on Malay Metal-Work. By WALTER ROSENHAIN, B.A., St. John's College, Cambridge. (With Plates X, XI)	161
XIII. Trephining in the South Seas. By the Rev. J. A. CRUMP. (With Plates XII, XIII)	167
XIV. The Relations between Men and Animals in Sarawak. By CHARLES HOSE, Resident of the Baram District, and W. McDougall, Fellow of St. John's College, Cambridge. (With Plates XIV, XV)	173
XV. Memorandum on the Languages of the Philippines. By WILLIAM E. W. MACKINLAY	214
XVI. A Provisional Classification of the Swords of the Sarawak Tribes. By R. SHELFORD, M.A., C.M.Z.S. (With Plates XVI, XVII)	219
XVII. The Colour Vision of the Natives of Upper Egypt. By W. H. R. RIVERS, M.D.	229

	PAGE
XVIII. The Races of Early Egypt. By W. M. FLINDERS PETRIE, D.C.L., Edwards Professor of Egyptology at University College, London. (With Plates XVIII-XX)	248
XIX. Notes on Crania from the Nile-Welle Watershed. By F. C. SHRUBSALL	256
XX. Measurements of Papuan Skulls. By J. GRAY, B.Sc.	261
XXI. Irish Copper Celts. By GEORGE COFFEY, M.R.I.A. (With Plates XXI-XXXIV)	265
XXII. The Lengua Indians of the Paraguayan Chaco. By SEYMOUR H. C. HAWTREY. (With Plates XXXV-XLI)	280
XXIII. The Native Tribes of Manipur. By T. C. HODSON	300
XXIV. On a Collection of Palæolithic Implements from Savernake. By EDGAR WILLETT, M.B. (With Plates XLII, XLIII)... ..	310

NOTE.—The *Anthropological Notes and Miscellanea* which formerly concluded the annual volumes of the *Journal*, are replaced until further notice by the contents of the Institute's monthly periodical "*Man*" (see *Journ. Anthropol. Inst. XXX, Miscellanea*, No. 1) which will be found, with its own title page and table of contents, at the end of the current volume (pp. viii. 192 with Plates A to M.)

ILLUSTRATIONS.

	PLATES.	to face page
I. Ruins of Dhlo-Dhlo, or Mambo... ..		28
II. Ruins of Dhlo-Dhlo :—1. North-East Side; 2. Enlarged Portion of No. 1; 3. Western Face		28
III. Ruins of Dhlo-Dhlo :—1. North-Western Side; 2. Enlarged Portion of No. 1; 3. North-West Corner from East		28
IV. Ruins of Dhlo-Dhlo :—1. Portion of North-West Side; 2. Square Corner in North-West Side; 3. Entrance in North Face... ..		28
V. Ruins of Dhlo-Dhlo :—1. Outer Enclosure (G); 2. Entrance to Outer Enclosure (H); 3. Outer Enclosure or Guard House (H)		28
VI. } VII. } Cephalometric Instruments and Cephalograms		116
VIII. }		
IX. Gohei and Inao :—1. Iwai-Gi; 2. Oho-Nusa; 3. Gohei; 4. Inao; 5. Gohei of Copper Cash		134
X. } XI. } Malay Metal Work		161
XII. 1. Skull of Toara, of Kabakada, in New Britain; 2. Skull of Tororuke, of Kabakada, in New Britain; 3. Skull of Tighan, of Ololai, in New Ireland		167
XIII. 1. Skull of Toara; 2. Skull of Tororuke; 3. Skull of Tighan		167
XIV. 1. Wooden Model of a Hornbill, made by Ibans, and used in Peace- making Ceremonies; 2. Tama Bulan Sprinkling Images of Balli Penyalong with the Blood of a Fowl		173

	<i>to face page</i>
XV. 1. Murik Tomb, Surmounted by a Small Human Image to which ... a Live Fowl is usually Tied; 2. Sprinkling Images of Balli Penyalong with the Blood of a Fowl	173
XVI. Pandat (Type 10); Niabor (Type 2); Parang Ilang (Type 1); Bayu (Type 5); Jimpul (Type 4)	219
XVII. Pakayun (Type 6); Langgai Tinggang (Type 3); Parang Pedang (Type 7); Latok (Type 8); Buko (Type 9)	219
XVIII. The Races of Early Egypt:—i. The Aquiline Type (1-10) ...	248
XIX. The Races of Early Egypt:—ii. The Plaited Beard Type (11-12); iii. The Pointed Nose Type (13-15); iv. The Tilted Nose Type (16-19); v. The Forward Beard Type (20-22)	248
XX. The Races of Early Egypt:—vi. The Straight Bridged Type of the Dynastic Race (23-27); vii. The Mixed Race of the Fourth Dynasty (28-30)	248
XXI. } to } Irish Copper Celts	265
XXXIV. }	
XXXV. A Lengua—A Common Type; Lengua Boy. Mangweam-ai; Lengua Boy. Metegyak (<i>i.e.</i> , "Born when Father was on a Journey"); Lengua Face Painting	280
XXXVI. A Lengua Village	280
XXXVII. 1. Lengua Women Dressed for a Dance; 2. Pottery-making ...	280
XXXVIII. 1. Lenguas Playing the Game "Hastáwa"; 2. Women's Dance at a Lengua Feast	280
XXXIX. 1. Lengua Boys with Pellet Bows; 2. Lengua Boy Using Blunt- headed Arrow; 3. Lengua Indian Hoeing Mandioca	280
XL. Miscellaneous Objects of Lengua Manufacture:—1. Clay Tobacco Pipe of Primitive Form; 2. Sabin Tobacco Pipe of Carved Wood: Back and Front; 3. Fishing Basket; 4. Doll of Rags and Bone; 5. Lengua Method of Making Fire; 6. Blunt- headed Arrow; 7. Iron-tipped Arrow; 8. Wooden Arrow; 9. Clay Water Jar; 10. Clay Vessel (Tóóthli), Painted	280
XLI. Miscellaneous Objects of Lengua Manufacture:—1. One-stringed Fiddle; 2. Wooden Whistle; 3. Wooden Whistle (another form) Ornamented with Strips of Polished Tin. (Tóóthli); 4. Wind Instrument of Cow-horn, with Reed Mouthpiece; 5. String Bag	280
XLII. Flint Implements from Knowle Farm Quarry, Savernake ...	310
XLIII. 1-7. Flints from Knowle Farm Quarry, Savernake; 8. Flint Implements from Abydos, Egypt (in Pitt Rivers Museum) ...	310

BLOCKS.

	PAGE
Moko Instrument presented to British Musuem by Sir George Grey, 1854 (Fig. 1)	36
Maori Tatu Instruments, after Craik (New Zealanders) (Figs. 2-7) ...	36
" " " " Polack (Figs. 8-12)	36

CORRESPONDING FELLOWS.

Appleyard, Rev. W. Dewsbury.
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- 1893 Rigg, Herbert, Esq., 13 *Queen's Gate Place, S.W. ; and Walhurst Manor Horsham.*
- 1850 Ripon, The Most Hon. the Marquis of, K.G., G.C.S.I., C.I.E., D.C.L., F.R.S., 9 *Chelsea Embankment, S.W. ; and Studley Royal, Ripon.*
- 1889 Risley, H. H., Esq., C.I.E., M.A., *Bengal Secretariat, Calcutta.* (¶)
- 1900 Rivers, W. H. R., Esq., M.D., *St. John's College, Cambridge.*
- 1901 Rose, H. A., Census Superintendent, *Simla, India.*
- 1882 Roth, Henry Ling, Esq., 32 *Prescott Street, Halifax.* (¶)
- 1882 Rothschild, Hon. Nathaniel C., *Tring Park, Tring, Herts.* (*)
- 1899 Rücker, Miss S. C., 4 *Vanbrugh Terrace, Blackheath, S.E.*
- 1871 Rudler, F. W., Esq., F.G.S., VICE-PRESIDENT, Corresponding Member of the Anthropological Society of Paris, 25 *Mornington Crescent, N.W.* (¶§)

Year of
Election.

- 1863 Salting, W. S., Esq., F.R.G.S., 40 *Berkeley Square, W.* (*)
- 1864 Sanders, Alfred, Esq., F.L.S., F.Z.S., *The Hawthorns, Caterham Valley, Surrey.*
(**¶)
- 1886 Sarawak, H.H. the Ranee of, *Kuching, Borneo, via Singapore.*
- 1876 Sayce, Professor A. H., M.A., LL.D., *Queen's College, Oxford.* (**¶)
- 1900 Seligmann, Charles G., Esq., 23 *Vincent Square, S.W.*
- 1885 Seton-Karr, H. W., Esq., 31 *Lingfield Road, Wimbledon.* (¶)
- 1866 Shaw, Lieut.-Colonel F. G., *Heathburn Hall, Carrigaline, Co. Cork.* (*)
- 1901 Shelford, S. H., *Sarawak via Singapore.*
- 1898 Shrubsall, Frank Charles, Esq., M.A., 34 *Lime Grove, Uxbridge Road.* (**¶§)
- 1901 Skeat, W. W., Esq., M.A., 2 *Salisbury Villas, Cambridge.*
- 1866 Skues, F. M., Esq., M.D., Brigade Surgeon-Major, 51 *Kingstead Road, Catford.*
(*)
- 1898 Small, James Willoughby, Esq., Principal Victoria College, *Jaffna, Ceylon.*
- 1865 Smith, Worthington G., Esq., F.L.S., 121 *High Street, Dunstable.* (¶)
- 1893 Somerville, Lieutenant Boyle T., R.N., *H.M.S. "Triton," Chatham.* (¶)
- 1867 Southby, Philip, Esq., F.Z.S., Barrister-at-Law, *Bampton, Faringdon.* (*)
- 1889 Southesk, The Right Hon. the Earl of, K.T., *Kinnaird Castle, Brechin, N.B.*
- 1886 Stanley, W. F., Esq., F.G.S., *Cumberlow, South Norwood, S.E.* (¶)
- 1873 Stanmore, The Right Hon. Lord, G.C.M.G., K.C.B., D.C.L., *Red House, Ascot.*
- 1880 Stephens, Henry Charles, Esq., M.P., F.L.S., F.G.S., F.C.S., *Avenue House, Church End, Finchley, N.; and 4 Carlton Gardens, S.W.* (*)
- 1892 Stephenson, Miss Rose.
- 1881 Stopes, H., Esq., 11 *Queen Victoria Street, E.C.* (**¶)
- 1887 Straker, Joseph, Esq., *Dipton House, Riding Mill, Northumberland.*
- 1883 Streeter, E. W., Esq., F.R.G.S., F.Z.S., 2 *Park Crescent, W.* (*)
- 1865 Swinburne, Algernon Charles, Esq., *The Pines, Putney Hill, S.W.*
- 1899 Swynnerton, Fred., Esq., *Oakwood Place, Simla, India.*
- 1899 Tabor, Charles James, Esq., *White House, Knott's Green, Leyton, Essex.*
- 1901 Tate, H. R., *Hampton Court Palace.*
- 1892 Taylor, Frederick, Esq., 250 *West 76th Street, New York City, U.S.A.* (*)
- 1879 Temple, Lieut.-Colonel R. C., C.I.E., Chief Commissioner Andaman and
Nicobar Islands, *Government House, Port Blair, Andaman Island; c/o*
H. S. King & Co. (¶)
- 1881 Thane, George Dancer, Esq., Professor of Anatomy in University College,
London, *University College, Gower Street, W.C.* (**¶)
- 1884 Thomas, Oldfield, Esq., F.Z.S., 9 *St. Petersburg Place, Bayswater Hill, W.* (**¶)
- 1873 Thompson, J. Barclay, Esq., M.A., Lee's Reader in Anatomy, 39 *St. Margaret's*
Road, Oxford. (*)
- 1890 Thomson, Arthur, Esq., M.A., M.B., Professor of Human Anatomy in the
University of Oxford, *The Museum, Oxford.* (¶)

Year of
Election.

- 1901 Thorn, W. W., *Hillmorton, Wallington, Surrey.*
- 1882 Thurn, Everard F. im, Esq., C.B., C.M.G., 1 *East India Avenue, E.C. (¶§)*
- 1896 Tims, H. W. Marett, Esq., M.D., 19 *Lyndewood Road, Cambridge.*
- 1899 Tocher, James F., Esq., F.I.C., *Chapel Street, Peterhead, N.B. (¶)*
- 1895 Tolley, Richard Mentz, Esq., F.H.S., *Oriel Lodge, Rushbury, Wolverhampton.*
- 1901 Travers, Major John A., *Field Place, Horsham, Surrey.*
- 1885 Tregear, Edward, Esq., Secretary, Department of Labour, *Tinakon Road, Wellington, New Zealand. (¶)*
- 1879 Trotter, Coutts, Esq., F.G.S., 10 *Randolf Crescent, Edinburgh.*
- 1891 Tsuboi, S., Esq., *Science College, Imperial Institute, Tokyo, Japan. (*)*
- 1889 Turner, Sir William, M.B., LL.D., D.C.L., F.R.S. Lond. and Edin., Professor of Anatomy in the University of Edinburgh, 6 *Eton Terrace, Edinburgh. (¶)*
- 1867 Tylor, Edward Burnett, Esq., D.C.L., LL.D., F.R.S., VICE-PRESIDENT, Professor of Anthropology, Keeper of the University Museum, Oxford, *The Museum House, Oxford. (¶§)*
- 1891 Tylor, Mrs. E. B., *The Museum House, Oxford.*
- 1891 Waddell, Lt.-Col. L. A., LL.D., 35 *Dartmouth Park Road, Highgate Road, N.W. (*¶)*
- 1901 Waddington, S., Esq., B.A., 47 *Connaught Street, Hyde Park, W.*
- 1863 Wake, C. S., Esq., Foreign Member of the Anthropological Institute of New York, 411 *East 45th Street, Chicago, Illinois, U.S.A.*
- 1874 Walhouse, M. J., Esq., 28 *Hamilton Terrace, St. John's Wood, N.W. (¶)*
- 1866 Wallace, A. R., Esq., D.C.L., F.R.S., F.L.S., F.R.G.S., F.Z.S., *Corfe View, Parkeston, Dorset. (¶)*
- 1891 Ward, Herbert, Esq., 53 *Chester Square, S.W. (¶)*
- 1897 Webster, John Aplin, Esq., 21 *Castle Street East, Oxford Street, W.*
- 1901 Webster, W. D., Esq., *Home Court, Palace Road, Streatham Hill.*
- 1895 Wells, Samuel, Esq., F.R.G.S., *Richmond, Yorks.*
- 1901 White, Franklin, Esq., *P.O. Box 669, Bulwago.*
- 1901 Williams, J. W., Esq., M.R.C.S., L.R.C.P. Lond., F.L.S., 128 *Mansfield Road, Gospel Oak, N.W.*
- 1901 Williams, S. Herbert, *Stedman House, Surbiton Hill.*
- 1869 Winwood, Rev. H. H., M.A., F.G.S., 11 *Cavendish Crescent, Bath.*
- 1901 Withers, A. Delisle, Esq., *Ewhurst, 21 Lichfield Road, Kew Gardens.*
- 1881 Wolfe, Miss E. S., *High Broom, Crowborough, Sussex. (*)*

SUBSCRIBERS TO THE PUBLICATIONS OF THE INSTITUTE.

The Library Committee of the Corporation of the City of London.

SOCIETIES, ETC., EXCHANGING PUBLICATIONS

WITH THE

ANTHROPOLOGICAL INSTITUTE.

GREAT BRITAIN AND IRELAND.

Dublin... Royal Dublin Society.
 — Royal Irish Academy.
Edinburgh... Royal College of Physicians.
 — Royal Society of Edinburgh.
 — Society of Antiquaries of Scotland.
Glasgow... Philosophical Society.
London... British Medical Association.
 — Egypt Exploration Fund.
 — Folklore Society.
 — Geologists' Association.
 — Hellenic Society.
 — India Office, Whitehall.
 — Japan Society.
 — Journal of Mental Science.
 — Nature.

London... Palestine Exploration Fund.
 — Quatuor Coronati Lodge, No. 2076.
 — Royal Archæological Institute.
 — Royal Asiatic Society.
 — Royal Colonial Institute.
 — Royal Geographical Society.
 — Royal Society.
 — Royal Society of Literature.
 — Royal Statistical Society.
 — Royal United Service Institution.
 — Society of Antiquaries.
 — Society of Biblical Archæology.
Taunton... The Somersetshire Archæological Society.
Truro... Royal Institution of Cornwall.

EUROPE.

AUSTRO-HUNGARY.

Agram... Kroätische Archäologische Gesellschaft.
Budapest... Magyar Tudományos Akadémia.
 — Magyar Nemzeti Néprajzi Ostálya.
Cracow... Akademija Umiejetności.
Vienna... Anthropologische Gesellschaft.
 — K. Akademie der Wissenschaften.
Sarajevo... Landesmuseum (Wissenschaftliche Mittheilungen aus Bosnien).

BELGIUM.

Brussels... Académie Royale des Sciences, etc. de Belgique.
 — Société d'Anthropologie de Bruxelles.
 — Société d'Archéologie de Bruxelles.

DENMARK.

Copenhagen... Société des Antiquaires du Nord.

FRANCE.

Lyons... Société d'Anthropologie de Lyon.
Paris... L'Anthropologie.
 — École d'Anthropologie.

Paris... Revue de l'Histoire des Religions.
 — Société d'Anthropologie.
 — Année Sociologique.

GERMANY.

Berlin... Berliner Gesellschaft für Anthropologie, Ethnologie, und Urgeschichte.
 — K. Museum für Völkerkunde.
 — Seminar für Orientalische Sprachen.
Breslau... Centralblatt für Anthropologie, etc.
Gotha... Petermann's Mittheilungen.
Halle-a-d-Saale... Kaiserliche Leopoldina Carolina Akademie der Deutschen Naturforscher.
 — Deutsche Morgenländische Gesellschaft.
Kiel... Anthropologischer Verein für Schleswig-Holstein.
Leipzig... Verein für Erdkunde.
Munich... Deutsche Gesellschaft für Anthropologie, Ethnologie, und Urgeschichte.

Stuttgart... Zeitschrift für Morphologie und Anthropologie.

GREECE.

Athens... Ephemeris Archaïologikè.
— Annual of the British School of Archaeology.

ITALY.

Florence... Società Italiana di Antropologia, Etnologia, e Psicologia Comparata.

Rome... Bullettino di Paletnologia Italiana.

— Società Romana di Antropologia.

Rome... Accademia dei Lincei.

Turin... Archivio di Psichiatria.

NETHERLANDS.

Amsterdam... Koninklijke Akademie van Wetenschappen.

Leiden... Internationales Archiv für Ethnographie.

The Hague... Koninklijk Instituut voor de Taal-, Land-, en Volkenkunde van Nederlandsch Indië.

PORTUGAL.

Lisbon... Portugal em Africa.

Porto... Portugalia.

RUSSIA.

Moscow... Imper. Obshchestvo Lubitelei Iestestvoznania, Antropologii, i Etnografii.

St. Petersburg... Imper. Akademia Nauk.

SWEDEN.

Stockholm... Academy of Antiquities, National Museum.

— Nordiska Museet.

— Ymer.

AFRICA.

Cape Town... S. African Philosophical Society.

AMERICA.

BRAZIL.

Rio de Janeiro... Museu Nacional.

CANADA.

Montreal... Royal Society of Canada.

Toronto... Canadian Institute.

UNITED STATES.

Cambridge, Mass.... Peabody Museum, Science.

Chicago... American Antiquarian.

— Field Columbian Museum.

New York... American Museum of Natural History.

Philadelphia... Free Museum of Science and Art (University of Philadelphia, Department of Archaeology).

Washington... American Anthropologist.

— Bureau of Ethnology.

— Smithsonian Institution.

— United States Geological Survey.

— United States National Museum.

Worcester, Mass.... American Journal of Psychology.

ASIA.

CHINA.

Shanghai... Royal Asiatic Society (China branch).

INDIA.

Bombay... Anthropological Society.

— Indian Antiquary.

Calcutta... Bengal Asiatic Society.

Colombo... Royal Asiatic Society (Ceylon branch).

JAPAN.

Tokio... Asiatic Society of Japan.

— Tokio-Daigaku (Imperial University).

JAVA.

Batavia... Bataviaasche Genootschap van Kunsten en Wetenschappen.

STRAITS SETTLEMENTS.

Singapore... Royal Asiatic Society (Straits Branch).

AUSTRALIA AND PACIFIC.

Honolulu... Bernice Pauahi Bishop
Museum.
Melbourne... Royal Society of Vic-
toria.
Sydney... Australian Museum.

Sydney... Australasian Association for
the Advancement of Science.
— Royal Society of New South
Wales.
Wellington, N.Z... Polynesian Society.

PUBLICATIONS RECEIVED IN EXCHANGE FOR "MAN."

ENGLAND.

London... Church Missionary Intelli-
gencer.
— Journal of the East India Association.
— Lancet.
— South American Missionary Society.

AUSTRIA.

Prag... Česky Lid.

BELGIUM.

Brussels... Mission Belge.
Ghent... Volkskunde.

FRANCE.

Dax... Société de Borda.
Paris... Revue des Traditions Populaires.
— Melusine.

GERMANY.

Brunswick... Globus.
Danzig... West Preussisches Provincial-
Museum.
Dresden... Bericht des Vereins für
Erdkunde.
Guben... Niederlausitzer Mittheilungen.
Munich... Korrespondenzblatt.
— Geographische Gesellschaft.

Nürnberg... Bericht der Natur-historis-
chen Gesellschaft.

NEW SOUTH WALES.

Sydney... Science of Man.

PORTUGAL.

Lisbon... Archeologo Português.
Serpa... A Tradição.

SERVIA.

Alexinatz... Karadjitch.

SWITZERLAND.

Zürich... Schweizerisches Archiv für
Volkskunde.

UNITED STATES.

Boston... American Journal of Archæ-
ology.
Chicago... Open Court.
Meriden... Biblia.
New York... Appleton's Popular Science
Monthly.
Philadelphia... Proceedings of American
Philosophical Society.

LONDON:
HARRISON AND SONS, PRINTERS IN ORDINARY TO HIS MAJESTY,
ST. MARTIN'S LANE.

JOURNAL
OF THE
ANTHROPOLOGICAL INSTITUTE
OF GREAT BRITAIN AND IRELAND.

ANNUAL GENERAL MEETING.

FEBRUARY 4TH, 1901.

C. H. READ, Esq., F.S.A., *President, in the Chair.*

The Minutes of the last Annual General Meeting were read and confirmed.

The Election of the following new Fellows was announced :

Mr. J. BRUCE, M.B., Town Hall Square, Grimsby.

Mr. A. H. GARDINER, Queen's College, Oxford.

The PRESIDENT declared the ballot open, and appointed, as Scrutineers, Mr. J. Gray and Mr. T. V. Hodgson.

The TREASURER presented his Report for the year 1900 ; the adoption was moved by Mr. GOWLAND, seconded by Prof. HOWES.

The SECRETARY read the Report of the Council for 1900 ; the adoption was moved by Mr. BRABROOK, and seconded by Mr. WALHOUSE. After some remarks by Dr. GARSON, the Reports were accepted *nem. con.*

The PRESIDENT delivered his Annual Address.

The SCRUTINEERS gave in their Report, and the following were declared to be duly elected, to serve as Officers and Council for the year 1901 :—

President.—Prof. A. C. Haddon, M.A., Sc.D., F.R.S.

Vice-Presidents.

A. J. Evans, Esq., M.A., F.S.A. | Wm. Gowland, Esq., F.S.A.

Prof. G. B. Howes, LL.D., F.R.S.

Hon. Secretary.—J. L. Myres, Esq., M.A., F.S.A., F.R.G.S.

Hon. Treasurer.—A. L. Lewis, Esq., F.C.A.

Council.

G. M. Atkinson, Esq.
 H. Balfour, Esq., M.A.
 Wm. Crooke, Esq., B.A.
 Prof. D. J. Cunningham, M.D., F.R.S.
 W. L. H. Duckworth, Esq., M.A.
 R. W. Felkin, Esq., M.D., F.R.G.S.
 H. O. Forbes, Esq., LL.D.
 J. G. Garson, Esq., M.A.
 E. Sidney Hartland, Esq., F.S.A.
 Col. Sir T. H. Holdich, K.C.I.E., C.B.

T. V. Holmes, Esq., F.G.S.
 E. F. im Thurn, Esq., C.B., C.M.G.
 A. Keith, Esq., M.D.
 R. Biddulph Martin, Esq., M.P.
 Sir C. E. Peek, Bart., M.A., F.S.A.
 R. H. Pye, Esq.
 E. G. Ravenstein, Esq., F.R.G.S.
 Prof. W. Ridgeway, M.A.
 W. H. R. Rivers, Esq., M.D.
 F. C. Shrubsall, Esq., M.A.

Assistant Secretary.—N. W. Thomas, Esq., M.A.

Prof. A. C. HADDON, having taken the Chair, proposed that a cordial vote of thanks be given to Mr. C. H. READ, the outgoing President, and that he be requested to allow his address to be printed in the *Journal* of this Institute. The motion was seconded by the Treasurer, and carried unanimously.

Votes of thanks to outgoing Council, and to the Treasurer, Secretary, and Assistant Secretary were also passed.

REPORT OF THE COUNCIL FOR THE YEAR BEGINNING 30TH JANUARY, 1900.

The Council is able to report very satisfactory progress during the year under review, which is shown not only in an increased number of fellows elected, and of meetings held, but in wider activity and usefulness in many directions.

The number of fellows continues to show steady increase; for the loss of two honorary fellows by death, and of ten ordinary fellows by death or resignation, has been more than balanced by the election of twenty ordinary fellows, and nine local correspondents under the By-law to which further reference will be made later on (p. 4). There has thus been a net increase of seventeen; leading to a total membership to-day of 356.

Among the losses which the Council has with regret to announce are Miss Mary Kingsley, Lord Armstrong, Sir William Hunter, Lieutenant-General Pitt-Rivers, and Professor Max Müller.

During the year under report, eleven ordinary meetings were held, and two special meetings in June and November for the reception of communications which could not be presented on the ordinary days of meeting; while the Huxley Memorial Lecture, of which more is said below, took the place of the first ordinary meeting of the autumn session. In addition to these, an extraordinary meeting was held in Oxford on July 3rd, to enable the members to study the archaeological and ethnographical collections of the Ashmolean and Pitt-Rivers Museums.

In the month of June the rooms of the Institute were utilised for an exhibition of specimens of Kabyle and Chawia pottery, jewellery and other industrial arts, collected by our fellows Mr. D. Randall-MacIver and Mr. Anthony Wilkin. The exhibition was visited by a number of fellows and others, and set a precedent which it is hoped may be followed in future years.

The proposal to found a Huxley Memorial Lecture, which has long occupied the attention of the Council, has at last been realised, and the first lecture was delivered on the 13th of November, by the first President of the Institute, the Right Honourable Lord Avebury, D.C.L., LL.D., F.R.S., who took for his subject "Huxley, the Man and his Work." The lecture was delivered in the theatre of the Museum of Practical Geology, the scene of many of Huxley's best-remembered discourses, and attracted a large and distinguished audience. The thanks of the Institute are due to the Director of the Geological Survey, Sir Archibald Geikie, LL.D., D.Sc., F.R.S., for his courteous grant of so appropriate a place of meeting. A Huxley Memorial Medal was struck in silver to commemorate the occasion, and was presented to Lord Avebury at the close of his address.

One double-number of the *Journal* has been issued during the year, completing Volume II of the new series, and Volume XXIX of the old numbering, which it has been found more convenient to revive.

To facilitate reference to the *Journal*, and to make it a more convenient record of the work of the Institute, the Council has authorised the following modifications in its form and mode of appearance.

1. From Volume XXX (= N.S. III) onwards, the annual volume contains the papers presented to the Institute between January and December of the calendar year. The first half of the volume thus contains the report of the Annual Meeting and the President's Address, together with the other proceedings of the Institute from January to June, and will be published as soon as possible after the end of the summer session: the second half contains the proceedings of the autumn session, and will be published as soon as possible after the end of the calendar year.

2. The arrangement of the cover is changed so as to bring the table of contents on to the front page, and make room on the third and back page for notices and other matter; and the cover itself is printed on paper of more durable texture than hitherto, and of a shade of green which is found less liable to fade.

3. The *Miscellanea* of Volume XXX are printed with separate pagination, so as to permit the whole of the *Miscellanea* of the annual volume to be bound up together at the end, and so to leave only one place where short articles are to be sought, instead of two, as heretofore. At the same time, to minimise the risk of confusion between two paginations, each item of *Miscellanea* is provided with a reference number in the margin, by which it should be quoted, instead of by the page number. For further convenience of reference each item is also provided with catch-titles of the subject, and of the author's name.

4. The separate pagination of the *Miscellanea*, above described, makes it

possible for the future to issue short copies of each sixteen page sheet of this part of the *Journal* in advance, to every one who may desire to have early information of its contents; and after careful deliberation, the Council has decided to extend the scope of the *Miscellanea* still further on the same lines, by issuing such advance copies in a separate cover to fellows and others monthly. The Institute thus comes into possession of a valuable instrument for the furtherance of its work, in the shape of a monthly magazine, the publication of which, under the title "*Man; a Monthly Record of Anthropological Science*," was begun in January, 1901. *Man* consists of sixteen pages of text monthly, together with a full-page plate; and is sold to fellows at an annual subscription of 6s., and to the public at 10s., or 1s. for the single number. Every fellow, however, whether a subscriber to the monthly issue or not, will receive in the place of the *Miscellanea* of the half-yearly volume of the *Journal* a complete copy of *Man* for the preceding six months.

So far as it is possible to judge at present, the prospects of this new departure are most favourable; the January number has been well received by the public press, and has achieved a steady sale.

5. After mature consideration also the Council has resolved to terminate the long standing agreement with its publishers, Messrs. Kegan Paul, Trench, Trübner and Co., and to take the publication of the *Journal* into its own hands. While taking this step, of which the importance is sufficiently obvious, the Council desires to place on record its sense of the continual courtesy of Messrs. Kegan Paul and Co., during the long period of their association with the Institute and with the previous Societies.

In the general administration of the affairs of the Institute, two or three points seem worthy of separate mention. The long delayed revision of the *By-laws* was brought to a satisfactory termination early in the year, and a printed copy of them was issued to every fellow enclosed in the latter part of Volume XXIX of the *Journal*. The Council desires to call the attention of the fellows to the provision for an *Executive Committee*, which has relieved the Council of much routine work, and enabled it to devote its limited time to weightier matters; to the revised *Library Regulations*, which are working well; and to the establishment of a new class of *Local Correspondents*, which is already securing the closer co-operation of working anthropologists in the remoter parts of the world.

The simplification of the routine-work above mentioned, and the rearrangement of the duties of the Institute's staff, have enabled the Council to dispense with the services of a Collector. The fellows have therefore been requested to pay their subscriptions for 1901 either direct to the Institute or to the Institute's account with Messrs. Robarts, Lubbock, and Co., and to adopt as far as possible the common and convenient practice of making their payments by a standing banker's order.

It is also mainly in consequence of the readjustment of the office work, and of the greatly increased activity of the Institute in every department, that the Council has to announce the resignation by Mr. Webster of the post of Assistant

Secretary which he has held for the past five years. Mr. Webster has served the Institute with unfailing goodwill and courtesy during a difficult period of its history, and the Council desires to put on record its sense of his constant devotion to its welfare. The vacant post has been filled by the appointment of Mr. N. W. Thomas, M.A. (Trinity College, Cambridge), who is already known to students of comparative religion by his investigation of animal superstitions, and to whose energy and resource the Institute is already greatly indebted for a further increase of activity, and for the marked progress that has been made in the revision and reorganisation of the library.

At the invitation of the Royal Society the Council has resolved to become responsible for the compilation of the British part of the section of Anthropology in the new International Catalogue of Scientific Literature. The Institute is represented on the British Regional Bureau by its President and by Professor Tylor; and has secured the adoption of important amendments of the original schedule. As, however, the schedule of Physical Anthropology even as finally adopted does not by any means cover the whole of the field of the Institute's activity, it has been resolved to supplement the titles required for the International Catalogue by a further list of anthropological literature which will be maintained in the office of the Institute and published as occasion serves.

Turning from general administration to the management of the library, the Council has to record substantial progress in several directions. The periodicals received in exchange have risen in number from 93 to 109 (34 British, 15 Colonial, 60 Foreign), and the number of books and pamphlets presented, from 76 to 180. With the very small sum (£10) which was available for the purpose, the current binding has been completed and some arrears made up; and something has been done to complete imperfect sets of periodicals by the purchase of missing numbers. The unbound pamphlets have been catalogued and put away in stout cardboard cases; and a large part of the library was rearranged in the course of the vacation so as to make the most of the available space. The great increase of acquisitions, however, and the prospect of even greater increase in the immediate future—more than half of the acquisitions having been made in the last quarter of the year—make the question of additional space more pressing even than it appeared when last year's Report was written; and the Council has already thought it well to empower the officers to make the necessary enquiries and to report during the current session.

The collection of photographs still grows steadily, and an important step has been taken by the formation of a loan-collection of lantern slides for the use of lecturers. In this matter, the Institute has had the good fortune to secure the co-operation of the Folklore Society; the loan collection of slides being placed under the management of a joint committee of the two institutions, and incorporating the small collections which were already in the possession of each. A full account of the working of the loan-collection will be found in the *Journal*, Volume XXX (*Miscellanea*, No. 11).

In another department also the Council is glad to record co-operation between the Anthropological Institute and the Folklore Society. Early in June, 1900, the then President of the Folklore Society brought to the notice of the Council of the Institute the urgent question of determining by special enquiry the status, laws, and social customs of the native races of the Transvaal and the Orange River Colony. After full discussion a detailed memorial was drawn up and submitted jointly by the Anthropological Institute and the Folklore Society to the Secretary of State for the Colonies, and from the terms of the reply it may be inferred that the necessary investigations will be undertaken, so soon as the condition of the new Colonies may permit.

Turning finally from the present to the future the Council recommends to the fellows the adoption of a definite policy in regard to some of the most important sections of the Institute's work. The rapid growth of the library is a source of continual anxiety; at the same time the usefulness of a library depends more than anything upon the extent to which it can be kept up to date by systematic accessions. The rapidly changing conditions of higher education may make it necessary before long to act promptly and vigorously if the "proper study of Mankind" is to secure due recognition in revised *curricula*, and in new educational centres. And the continuous and rapid destruction of non-European civilisations, and of the evidence for earlier stages of culture calls more imperiously than ever for organised and effectual effort for their preservation, or at least for observation of them before their inevitable disappearance. To all these points the Council has given its careful attention, as opportunity has served; and appeals confidently to the fellows for their cordial support in carrying out the great objects of the Institute on the lines laid down in this Report.

TREASURER'S REPORT FOR THE YEAR 1900.

The income of the Institute for the year 1900 was £534 10s. 11d., being £10 2s. 10d. more than the income for 1899. The subscriptions received during the year show an increase of £75 10s. 0d., consisting mainly of two life subscriptions amounting to £42, against none in 1899; and of arrears £37 16s., as against £6 8s. in 1899. In consequence of our having published only one double number of the *Journal* in 1900, instead of two as usual, the sales of publications have produced only £63 19s. 5d. as against £127 11s. 7d. in 1899, and £92 4s. 2d. in 1898.

The expenditure during the year 1900 was £588 7s. against £590 3s. 11d. in 1899, and has exceeded the income by £53 16s. 1d., and in consequence of this and previous deficits in our revenue account, £100 of our invested stock has been sold, the produce of which, £108 10s., has been placed to our credit with our Bankers. The expenditure on the *Journal* has been £43 less in 1900 than in 1899, but miscellaneous printing and stationery, and also stamps and parcels, have increased, as a result of increased activity in the Secretary's department. More

has been spent on the library, and it has been supplied with the electric light. The Huxley Medal and Lecture also appear for the first time in the accounts. These various increases in expenditure nearly balance the reduction in the cost of the *Journal*, which latter, moreover, is only due to the temporary delay in publication. In order to have more money to spend on the library and secretarial department the Council has dispensed with the services of its Collector, and trusts that the members will pay their subscriptions direct, without requiring many reminders; for the same reason the Council has resolved to promote "plain living" by the suppression of refreshments before the meetings, while "high thinking" will, on the other hand, be encouraged by the issue of a monthly publication called *Man*. What the effect of these alterations may be on the receipts and expenditure will be seen in two or three years' time, but it is hoped that it will on the whole be beneficial.

The liabilities at the end of 1899 (other than the moral liability to life members) were:—

	£	s.	d.
Rent, etc., for one quarter	33	15	0
<i>Notes and Queries</i>	10	9	8
Printing, Collector's commission, and sundries, including work on double number of <i>Journal</i> not completed, say	175	15	4
	<hr/>		
	£220	0	0
	<hr/>		

The assets at the same date were:—£500 Metropolitan 3½ per cent. Consolidated Stock (worth about £540), cash in hand and at the Bankers, £119 10s. 6d., some unpaid subscriptions, and the library, furniture, and stock of publications, blocks, and copyrights.

A. L. LEWIS, *Treasurer*.

PRESIDENTIAL ADDRESS

DELIVERED AT THE ANNIVERSARY MEETING OF THE

ANTHROPOLOGICAL INSTITUTE OF GREAT BRITAIN AND
IRELAND.

4TH FEBRUARY, 1901.

BY C. H. READ, F.S.A.

No public function in any part of our Empire can take place at this time without an allusion to the grievous loss that has befallen us in the death of our beloved sovereign Queen Victoria. While I do not feel that the occasion calls for many words, I am sure that the members of this Institute would desire that I should express their deep sense of the calamity that has come upon us all. The effect of so long a reign as was vouchsafed to the Queen is that every one of us feels that we are entering upon a new epoch, a feeling that has no doubt some foundation in fact. One remarkable feature of the past few days has struck me forcibly, as it must have struck others, and that is the eminently personal nature of the public mourning, every person one meets has the feeling of having lost a near friend or relation, essentially different from the impression produced by the death of one who was only a great personage in the state. The reason of this intense devotion of her people to the Queen's person is assuredly to be found in that rare womanly sympathy and tactful behaviour that she invariably showed in times of national trouble or disaster—her heart was always with her people, whether in times of mourning or of joy. May it be that her high standard of a royal life has become a firm heritage of the crown of England. In our King Edward VII, a name so entirely grateful to English ears, we have a man who for many years past has devoted himself with singular self-denial to the many and varied duties that fell to his lot, while his more recent utterances have been so full of judgment and royal dignity as to leave no doubt in our minds that he fully recognises the great responsibilities of his unique position, and is ready to bear them in a manner befitting the son of such parents, and worthy of the best traditions of the royal house of England. Long may he reign.

In this the first address from the chair in the twentieth century, it is a real pleasure to me to be able to say that our own branch of science seems to be on the upward road. I ventured at this time last year to foreshadow such an improving tendency, but found somewhat to my surprise that my forecast was not received

with the unanimous assent that I had hoped. This year, in place of vague generalities, I am fortunately able to point to substantial facts in proof of my assertion, facts that admit of no question.

In the first place I wish to call special attention to our own domestic affairs, which concern us very nearly. The report of the Council which you have just heard read, contains much that I consider distinctly cheering. The increase in the number of Ordinary Fellows elected compares very favourably with previous years, and I would point out that the importance this year is not so much in the mere number, for among our new Fellows are some names that stand highest in this country in the study of anthropology and primitive civilisation. Thus we may fairly look forward to finding at our meetings and in our publications the very best material that the country can produce.

Another incident in the past year that I hope may prove fruitful of good things is the inauguration of the Huxley lecture. This lecture was probably the most popular function in the annals of the Institute; and I see no reason why every succeeding lecture should not be equally so. From the nature of the case the first lecture was introductory and general, and no more fitting lecturer could have been chosen than Lord Avebury, whose eminently sympathetic character lent a charm to the subject, which, though full of incident as well as of human interest, might well have been turned into a dry and somewhat academic discourse. That it was nothing of this kind we have to thank Lord Avebury, who thus started this most important connection between the Institute and the general public. With a moderate exercise of judgment, the Huxley lectures may be made a most valuable means of obtaining recruits for anthropology.

I will now allude to another means of attaining the same desirable end, though as far as publication is concerned it belongs to the current year. This is the monthly journal called "*Man*," of which the first number has appeared. This departure from ancient methods we owe to the restless energy and resource of our talented Secretary, Mr. Myres, to whom we owe much in other directions also. It may at first sight seem wasteful to duplicate the matter that ultimately appears in the pages of our *Journal*, but in reality it is not so. It had long been felt a drawback to offering current matter to the Institute that an interval of six months or more would probably intervene before it would see the light in print. For many things it may be that this is no disadvantage, but it will not be disputed that prompt publication has many merits, and perhaps even more for the Institute than for the writer of a paper. Such a journal even of the modest dimensions of our present venture, serves as a medium of communication between students both at home and abroad; it attracts far more material than a quarterly or half-yearly journal can possibly do, and material moreover of a kind that, though of high importance, would be quite out of place in a publication appearing less frequently.

It has another virtue that must not be overlooked, in that it brings into notice at the beginning of every month the useful work that the Institute is doing, a form of advertisement of great practical value. We have reasonable grounds for

hoping that this modest sheet will have such success during the current year that the Council may feel justified in continuing its issue as a regular part of the publications of the Institute.

Another new departure from our ancient procedure that has marked the last year is the appointment of a number of gentlemen located in many parts of the world, as Local Correspondents of the Institute. Here again we think that useful material for our meetings and publications will be forthcoming as a result. These correspondents are invited to contribute notes and papers relating to the peoples with whom they are in daily contact, and their contributions, which will have special value as being first hand, will appear in the *Journal* or in "*Man*" as their nature may demand.

An undertaking in which we propose to play our part is the International Catalogue of Scientific Literature. This vast and comprehensive scheme has at last been brought into something like system and begins its universal work this year. The Royal Society Committee has had no light task in reducing the various and often conflicting interests into a working scheme, and it is no secret that even now there is dissatisfaction among the representatives of the different branches of science with regard to the schedules that form the basis of their contributions. Some overlapping of work there must of necessity be, having regard to the intimate relations of the work of many societies one with another, but to a certain extent the useless duplication of work has been foreseen and prevented by the instructions of the Committee. With regard to the schedule for our own section we ventured to protest against parts of it that we regarded as illogical or unpractical, as well as against its limited character. In great part our protest met with success, and the result was a modification of some parts and to some degree an extension of its scope. The exclusion from such a scheme of every branch of anthropology except that dealing with the physical characters of man reveals, however, a state of mind in English science that can scarcely be called scientific, and differs widely from that prevailing on the Continent or in America. There can be little doubt that it will be found in practice impossible to deal with physical anthropology, which on another side comes very near to comparative anatomy, without taking in the vast amount of important literature dealing with man as a social being and something more than an animal. Thus we have reason to hope that the inherent difficulties of the present arrangement will work for us in bringing about the complete acceptance of all sides of anthropology as coming under the denomination of scientific literature.

I now come to what I think is the most signal step that has been made in the recognition of anthropology as a useful branch of science, and it came about in this wise. Some two years ago I had a conversation with Mr. Risley, who has done such excellent work in India, with regard to the coming Indian census, with the result that the aid of the British Association was invoked, and the India Office appealed to, that some ethnographical material might be collected by the census officers. The scheme as it came from the British Association Committee was in

truth of somewhat formidable dimensions, and it could scarcely be expected that trained photographers and officers competent to take measurements should be attached to the staff of the census, over the whole area of India. But the India Office and the Indian Government were both sympathetic, and the following letter from Sir Arthur Godley to Sir Michael Foster shows exactly what is proposed:—

“ India Office,

“ Whitehall, London, S.W.

“ SIR,

“ *December, 1900.*

“ With reference to your letter of December, 1899, and my reply No. R. and S. 3539, of the 16th January, 1900, I am directed to inform you that the Secretary of State for India in Council has now received the remarks of the Government of India on the suggestion of the British Association for the Advancement of Science, that opportunity should be taken to collect ethnographical information by means of the Indian Census of 1901.

“ 2. The Government of India entirely agree with the Secretary of State's recognition of the importance of the investigations which the Association suggested, but find themselves constrained to say that it is impossible (except to the limited extent indicated in paragraph 4 of this letter) to make these investigations by means of, or in connection with, the Census. They consider that the addition to the Census Schedule of Columns relating to even a small number of ethnographic facts would expand it to unwieldy dimensions; the enumerating agency is wholly unfitted to conduct such an inquiry, and the facts recorded by it would be worthless; and they apprehend that there would be grave risk not only that the accuracy of the entries in the essential columns would be impaired by the additional burden imposed on the enumerators, but also that the unusual nature of the questions asked would give rise to rumours and excite apprehensions which would seriously interfere with the ordinary operations of the Census.

“ 3. The Government of India also deem it impracticable to carry out the suggestion that photographers should be placed at the disposal of the Census officers, as this, besides being very expensive, would hinder the officers' proper duties, and would delay the submission of the reports which it is desired to complete as soon as possible.

“ 4. With the view, however, of taking action, as far as may be practicable, in the direction of collecting ethnographical information, the Census Commissioner has instructed the Census Superintendents to endeavour, in the districts which they visit, to obtain, from the most trustworthy sources, particulars under uniform headings regarding the history, structure, traditions, and religious and social usages of the various tribes and castes. The Commissioner considers that nothing beyond this can be undertaken in connexion with the Census operations, and the Government of India accept his opinion; but they have considered the question how far it is possible and advisable apart from the Census to encourage and assist ethnographic investigations in India, and have submitted a scheme by which it is

hoped that in the course of a few years a fairly complete account of the ethnography of the larger provinces may be obtained.

"This scheme has received Lord George Hamilton's approval.

"I am, Sir,

"Your obedient^t Servant,

"(Signed) A. GODLEY.

"SIR MICHAEL FOSTER, K.C.B., F.R.S.,

"Burlington House,

"Piccadilly, W."

Thus it will be seen that in connection with the Census we may expect to have a considerable amount of ethnographical material; but there is a larger matter indicated in the closing words of the letter, where it is stated that the Government of India have "submitted a scheme by which it is hoped that in the course of a few years a fairly complete account of the ethnography of the larger provinces may be obtained." It is to this scheme that I look for something on a scale worthy of the Indian Government. Mr. Risley wrote in the autumn of last year to tell me of the progress that had been made in carrying out the British Association proposals, and explained how considerable delay had been caused by the necessity of dealing with the very severe famine.

I should like in passing to point out the high value of men of the knowledge and experience of Lord Curzon in such a position as Viceroy of India, when a question of this character arises. Lord Curzon has read much and travelled much, and has constantly been brought into contact with the natives of many parts of the world. To a man of his varied experience it is not necessary to bring forward many arguments to show the value in India of such a thing as an ethnographic survey. He already fully realises the importance of it, and must, I am sure, have been of the greatest help to Mr. Risley in carrying the scheme through. What this scheme is may be described in a few words. It will be a regular survey embracing ethnography and anthropometry, and extending over five years. In every province a selected man will be paid to superintend the work, and special monographs on particular tribes will be written by various authorities. Mr. Risley, I am pleased to say, will control the whole as Director of Ethnography for India. No one is better qualified by his previous experience and talents for such a post, and I do not doubt that the results of the five years' work will be found of such value in the administration of the various provinces that ethnography will be recognised as an essential part of the administrative machine. Mr. Risley has asked the help of the Institute in preparing his sets of questions, and this we have arranged that he shall have; but in a general way his plan of operations will be the same as he pursued in Bengal fourteen years ago. Here, again, I think I am justified in claiming an advance in the official recognition of anthropology.

Yet another step has been made in the favourable reception accorded by the Colonial Office to the memorial on the natives of South Africa sent in by the

Folklore Society and ourselves to Mr. Chamberlain. The state of the natives in South Africa, when the time comes for peaceful government, is not easy to foresee. They have experienced in the past the benefits of British rule, and if our officers are allowed a fair field, there will probably be few difficulties. But it is quite on the cards that it will not be easy in some quarters to obtain a fair hearing, and it is in such cases that the thorough understanding of native laws and customs becomes a matter of the first importance. We may be sure that the emissaries working against British influence will be well informed in such matters, and will be ready to take advantage of every superstitious turn in the native mind. Much waste of valuable time, money, and even human lives, will be avoided if the Government takes this matter in hand; the men capable of dealing with the various African tribes will not be hard to find, and I trust that no time may be lost in securing their services well in advance of the actual time when they are needed.

Such are some of the events of the past year upon which I rely to prove my contention that there is a marked advance in the recognition of anthropology; and I think you will agree that they are important enough to justify me in making the claim.

We now have to consider what this all means and the duties it entails on us. So far as the Government or official point of view is concerned, it is a commonplace that routine is apt to control all official action, and that a new departure, while it may come from within, more generally, and in some ways beneficially, has its origin outside a Government department. The ethnographic survey of India, of which I have just spoken, is a case in point. I think it possible, in this case, that we have obtained a greater concession from the scheme having been put forward through the British Association than would have been the case if it had originated entirely with the Government of India, though at the same time I fully recognise that it is to the enlightened foresight of Lord Curzon that we owe nearly the whole of the power we possess.

Whether this is the case or no, it certainly behoves the Council of this Institute to keep now a watchful eye on the current of public events, so that no opportunity is lost of placing in an obvious light the utility of anthropological methods. The concessions in this direction that we have obtained of late from ministers and other public men should be used with judgment and assiduity in obtaining constant, instead of occasional, recognition of the value of our work. I have always found that, properly approached, the officers of the higher branches of the civil service are quite ready to listen to and forward any scheme that has a reasonable chance of success and is not too costly.

So many great undertakings in this country are, however, the outcome of private enterprise that it must be borne in mind that fully as much energy is engaged in private ventures among primitive peoples as can be found in official circles. I need only instance the Niger Company and others of the kind on the African Continent, without going back to the East India or Hudson's Bay

Companies, one of which has long been Imperial as the other is gradually becoming absorbed in the Empire. We should in time, if circumstances continue to favour us, be in a position to give the officers of such companies valuable information for the conduct of their affairs with natives, and thus be of distinct value to commercial enterprise. It is only by such measures that the real utility of scientific methods can be brought home to the public mind; and when I say that *we* must see to this, I do not of course mean that this Institute is to do the work alone, though I trust that it will be always in the forefront, but that all who are working at, or interested in, anthropology must lose no chance of forwarding the study, and of putting before both the official and commercial world the money value of its results. In order to anticipate possible criticism it may be well to say definitely that I have no wish to regard this or any other branch of science as primarily a money-getting business. There are many discoveries and methods in science that have conferred an immense boon on humanity without putting a penny into anyone's pocket. It is well that it is so, for I am inclined to think that a branch of science that is essentially commercial is very apt to some extent to lose caste from this very fact. My point is that anthropology can confer benefits on the State and on the commercial world, and may, therefore, fairly demand the corresponding reward. The reward may in some cases take the form of public recognition, or it may be something more substantial and tangible; but in either case it would be a benefit that we cannot afford to overlook, and, in my judgment, is worth trying for.

There is one other matter that I have more than once publicly advocated, and that is the more definite recognition of anthropology in our teaching centres. This really is closely connected with my previous argument, and thus may well follow it. I say *definite* recognition, for in most Universities there is a kind of half-hearted course into which anthropology enters to a degree; but the way, if not the will, seems wanting to put the teaching on its proper footing and to let it stand on its own merits. At Cambridge the way is slowly opening, and I trust that within a few years there will be a chair of anthropology filled by one of the competent and energetic men now working there at the subject. Here, again, it is at this moment the want of means that blocks the way, and I would venture to suggest that a beginning should be made by one or more of the many wealthy men interested in Cambridge or in science or in both. I believe a first-rate man would be forthcoming if only an income of say £300 a year were ensured for a limited term of five to ten years. If this could be done it would be beneficial in two ways. It would secure a good man for the University, and he would then have the opportunity of proving to the University that anthropology really was a branch of science and that there was no need to mask it as part of a medical degree, or to call it by anything but its real name. If at the end of the time the unlikely event happened and it was found to be a redundancy and useless, then the course to be taken by the University would be simple and nobody could say a word of reproach. I speak of Cambridge particularly, because the strides made there in this direction

during the last few years are most remarkable, and I think the scheme I propose would be received with favour, as well as give them at the same time a helping hand in the direction in which they are now going vigorously. But I would by no means wish to limit the chairs of anthropology to the two great Universities. *Primâ facie* it might be thought that some of the others would be more likely to take up the subject, say for instance Birmingham, where the scope of the new University has been the subject of a good deal of consultation. Here would be a chance ready to hand of putting into practice the useful side of anthropology.

With regard to the newly constituted University of London I have already stated my view, but difficulties stand in the way of what I still think is a practicable scheme. One part of it, though not an essential one, was the installation by the side of the University of the anthropological collections now belonging to the nation. This would provide a concrete centre for anthropological study, such as seems beyond the possibility of realisation within any reasonable time. Speaking entirely as one of the public, and not as an officer of the British Museum, for I have no information, it certainly seems unlikely that any addition to the Museum of a useful size will be made during the next few years. The enormous cost of the South African campaign will be held a sufficient excuse for any Chancellor of the Exchequer for some time to come, and meanwhile what is to be done?

I have recently received from Dr. von Luschan, one of the directors of the Museum für Völkerkunde in Berlin, a strong statement that he has recently printed in "Die K. Knorr'sche Sammlung von Benin-Altartümern . . . in Stuttgart," 1901 (p. 3), in which he comments in very forcible terms on the neglect of our opportunities that is so common in England with regard to matters ethnographical. He points out how in Berlin the colonial officials are constantly helping the national museums, and calls especial attention to the way in which the spoils of British blood and treasure obtained at Benin were sold to foreign museums.¹

¹ Zunächst waren natürlich die Bemühungen der Fachleute mehr darauf gerichtet, den einzelnen Sammlungen einen möglichst grossen Anteil an dem Funde zu sichern, als darauf, die Stücke selbst ernsthaft zu studieren. So begann ein Jagen und Preistreiben, wie es in der Geschichte der ethnographischen Museen unerhört ist und sich wohl niemals wiederholen wird. Dabei zeigte sich die merkwürdige Erscheinung, dass England selbst nicht im stande war, den in einer britischen Kolonie entdeckten und mit britischem Geld und Blut gehobenen Schatz auch ganz allein für das britische Museum zu sichern. Das steht mit der unbegreiflichen und nahezu frevelhaften Geringschätzung im Zusammenhang, welche der Völkerkunde und der ethnographischen Abteilung des Britischen Museums gegenwärtig seitens der Britischen Regierung zu teil wird. Die Mahnrufe eines so ausgezeichneten Forschers und so hochverdienten Beamten wie C. H. Read werden in den Wind geschlagen und die oberste Leitung des Britischen Museums selbst scheint die ethnographische Abtheilung nur als ein lästiges Anhängsel zu betrachten, das in jeder Weise niedergedrückt und klein erhalten werden muss. So fehlt es jetzt in London nicht nur an Geld zum Erwerben und an Raum zum Aufstellen von ethnographischen Sammlungen, sondern auch an jenem harmonischen Zusammenarbeiten der Kolonialverwaltung mit den wissenschaftlichen Instituten, das z. B. in Berlin so schöne und wichtige Resultate zeitigt. Deshalb entsprechen die kolonialen Sammlungen im Britischen Museum auch nicht entfernt der politischen Bedeutung des

He says that the Ethnographical Museum in Berlin is now seven times as extensive as the collection in the British Museum, and will in a few years be ten times as large, while every year that passes sensibly diminishes the stock of available specimens, not so much by destruction as by the change in the habits of the natives. This is not pleasant reading for one in my position, nor should it be any more pleasant for any Englishman interested in the all-round progress of his country. How can it be bettered? For my own part I do not think that any marked improvement can take place until a proper home is found for the anthropological collections where they can be set out in a useful and scientific manner, instead of being considered an excrescence on the national library and archaeological collections. As I before suggested, if they could be set down in the Imperial Institute they would be conveniently near the students of the London University and would be appropriately placed in the vicinity of the Natural History Branch of the British Museum, to which latter institution they would of course continue to belong.

On the score of popularity the ethnographical collections of the British Museum have no need to complain—with the public they come next in interest to the Egyptian mummies—but I feel sure that in sufficiently large galleries to admit of their proper display the popularity would be far greater, while the advantage to the collections themselves would be incalculable, both in the greater facilities for study and—what I am sure would follow—much more numerous accessions.

I can think of no better solution of the difficulty than this, and I therefore venture to repeat it here, at the risk of being tedious. What I have put together here is little more than an amplification of the Council's report. But I have

Weltreiches, und so gehen der Wissenschaft Jahr um Jahr kostbare Schätze überhaupt ganz verloren, weil in dem Augenblick, in dem allein sie gehoben werden könnten, der richtige Mann an der richtigen Stelle fehlt.

Ich würde keinerlei Veranlassung haben, britische Verhältnisse hier zu beleuchten, und es würde mir vielleicht mehr zustehen, stillschweigend mich darüber zu freuen, dass die Berliner Sammlung jetzt siebenmal so gross ist, als die Londoner, und in einigen Jahren vielleicht schon zehnmal so gross sein wird—aber über das lokale Interesse hinaus giebt es ein allgemein menschliches, und dieses erfordert, dass auch in England selbst endlich begonnen wird, der ethnographischen Erforschung wenigstens der eigenen Schutzgebiete jenen Grad von amtlichem Wohlwollen entgegenzubringen, der durch den Ernst der Lage geboten ist. Denn ethnographische Sammlungen und Beobachtungen können entweder jetzt, in zwölfter Stunde noch gemacht werden, oder überhaupt nicht. Alte Kupferstiche und Bilder wird man auch in hundert Jahren noch kaufen oder wenigstens studieren können, genau wie heute, weil sie im Kunsthandel und in allerhand Sammlungen sorgfältig konserviert werden—der ethnographische Besitz der Naturvölker schwindet aber unrettbar dahin vor dem zersetzenden Einfluss einer fremden Kultur. Handel und Verkehr, Missionare und Beamte arbeiten heute alle gleichmässig an dieser Zertrümmerung des Alten, und je energischer die materielle Besitzergreifung, um so gründlicher und schonungsloser ist auch die Zerstörung der alten Sitten und Gebräuche. Diese müssen jetzt studiert und für die Nachwelt festgehalten werden oder sie bleiben der Wissenschaft für ewig verloren. In diesem Sinne schien mir dieser Excurs im allgemeinen ein *nobile officium*, dem ich mich nicht entziehen durfte, auch wenn ich voraussehe, hier und dort bei kleinen Geistern anzustossen, aber er schien mir auch im besonderen nötig, um zu zeigen, wie es überhaupt möglich ist, dass auch nur ein einziges Stück der englischen Kriegsbeute von Benin in eine kontinentale Sammlung gelangen konnte.

felt strongly for many years past the urgent necessity for some action in the various directions indicated that I think my duty on this my last appearance in the Presidential chair cannot be better performed than by pressing home by other arguments the recommendations the Council have put before you.

I cannot pass by the list of our losses during the year without a reference to at least two of the names in it.

I need scarcely say many words about a man of the distinction and world-wide reputation of Professor Max Müller. His contributions to the history of language have secured for him an assured place in the temple of literature.

General Pitt-Rivers is for us in this room a much more familiar figure, and his death makes a gap that will scarcely ever be entirely filled. Endowed by nature with talents of no mean order, he was untiring in his investigations into the problems of early archaeology and anthropology. It is to him that we owe the application of the theory of evolution to ethnological objects, which, even if it was at times strained in the application, was without doubt in the main justified. He had for many years been a collector and explorer of prehistoric sites, when by a singular chance he inherited the Rivers estates in Dorset and Wiltshire, which were full of ancient remains of just the character that was to him of such interest. There, within the limits of his own park, he found enough to give him occupation for the remaining twenty years of his life. His methods of exploration were most thorough and scientific, and the possession of ample means enabled him to print full accounts of all his work in a minute and accurate style that would be difficult to surpass. These volumes alone would be a sufficient monument for any man, but they were only a part of the work that he laid upon himself. In his museum at Farnham in Dorset is to be seen a large-scale model of every excavation he undertook, showing with the utmost precision the exact position of every object found, while the objects themselves were shown in cases near by. The museum contained many other things, however, besides the local relics, and it was always fascinating to hear the General explain his reasons for gathering together, in the heart of the country, collections of such variety and extent. By a recent judgment of the Court of Chancery it is now clear that the museum is to be kept up in the same way as during the General's lifetime. This, I may say, was his intention, but the Court ruled that some of his provisions were impossible. I have made no mention of the Pitt-Rivers Museum at Oxford, a gift from the General to the University, for this, under the charge of my friend Mr. Balfour, is now so well known as scarcely to need a reference. It differs from other museums not so much in its contents as in the method of arrangement. This certainly adds greatly to the interest of the objects, and is at the same time a fresh testimony to the originality of the General's ideas.

To many of us his commanding figure and somewhat masterful ways were very familiar; while as President of the Institute he imported something of military methods into the procedure. His enthusiasm, his energy, even when in very poor health, and his versatile talents compelled one's admiration, and for my

own part I may say that I had a great regard for him. He was of a type rarely found, and now that he is gone there is no one to take his place.

In Miss Mary Kingsley we have a very different personage. Kindly, sensible, observant, with a cleverness that was not of a common sort, it was impossible not to like her. If her genial face and smile were not a sufficient passport, her common sense would certainly hit the mark. Apparently frail even to delicacy, it is marvellous to think of the endurance she showed in her West African journeys. Her influence was no less wonderful, and will long survive her short but well filled life. The "Mary Kingsley Society," founded by her friends and admirers in the hope of carrying out some of her plans for the bettering of the state of men, black and white, in West Africa, will assuredly last until it has done its work. A part of the general fund raised in memory of Mary Kingsley will be given to the Hospital for Tropical Diseases in Liverpool, while another part is to be devoted to the collection of native history tradition and religious or superstitious ideas. With this latter scheme the Institute must necessarily be in entire sympathy, and we will hope that it may begin its work soon under the best auspices.

This is the burden of what I have to say in my last appearance as your President. In leaving this dignified post, to which you were good enough to elect me two years ago, I must ask you to accept my gratitude for the kind way in which you have borne with my short-comings. There is only one merit that I can honestly lay claim to, and that is that I have been a good attendant at the meetings. Otherwise I fear I have not been able to give as much time to the work of the Institute as I could have wished, but that was entirely beyond my own control—a very small part of my time is my own.

Here I should like also to express my thanks to the various officers of the Institute, who have helped me through many difficulties during the past two years.

I now leave you with the greatest confidence under the guidance of my distinguished friend and yours, Professor Haddon. In him the Institute has a man equally conversant with the theory and practice of anthropology. His wide experience of travel, joined to assiduous study and practice in teaching at home, make him in many ways an ideal President of such a society as this. That he has the interests of the Institute at heart I am quite sure, and I am equally sure that he will be loyally and ably supported by the officers in every step that may lead to advancement or improvement.

ON THE RUINS OF DHLO-DHLO, IN RHODESIA.

BY FRANKLIN WHITE.

[PRESENTED APRIL 23RD, 1901. WITH PLATES I-V.]

IN the central portion of Rhodesia there are numerous stone constructions, now more or less in ruins, scattered over a considerable area. So little is accurately known about them that it is not possible to say definitely with what object they were built. The native races of the present day attribute to them mysterious origin of the class which usually appeals to the ignorant imagination.

The occupants most certainly not only possessed but also smelted and worked gold.

The ruins are generally found on or near granite knolls or bosses, not as a rule actually in the gold-bearing districts, although auriferous veins are often found at no great distance away. The builders seem to have selected in preference an agricultural country with positions easily defended. The granite areas, with their numerous streams, bare knolls, and scattered boulders, would best comply with these requirements.

In his *Ruined Cities of Mashonaland* Mr. Theodore Bent records the results of his exploration of the Zimbabwe ruin, the most extensive yet discovered, and it is to be regretted that such systematic research has not been continued. Now, additional knowledge can only be gained from occasional visits of travellers to ruins lying near their routes or from work carried on chiefly in search for gold and ornaments. The latter is fortunately conducted in such a way as to do the least damage compatible with the treasure-hunting, but it naturally is not done with the object of collecting information or of investigating points of interest.

GENERAL DESCRIPTION.

The Dhlo-Dhlo or Mambo ruins, the subject of this paper, are located some 50 miles north-east of Bulawayo, or say $19\frac{3}{4}$ degrees south and $29\frac{1}{4}$ degrees east.

The level above sea is about 4,500 feet.

They occupy a commanding position on a granite plateau between two streams forming part of the head waters of the Inciza River, a tributary of the Limpopo.

The name "Mambo" is derived from the designation of the tribe of Kaffirs who occupied this country before the Matabeles conquered it.

I was able to make a fairly accurate plan of the most important part of these ruins and to take some photographs which show the construction of the walls and the different styles of ornamentation used by the builders.

Some prominent bosses of bare granite were made use of as base for the walls, and the builders were fully aware of the tendency of granite to peel off in slabs under atmospheric influences, perhaps assisted by fire. They thus obtained a large supply of material well suited for their purpose and close at hand. From the hills a few miles away they brought slabs of banded ironstones, which were ingeniously used to form a contrast with the grey of the granite.

A reference to the plan (Pl. I) will show that the main building is of a rough egg-shaped form 350 feet long and 200 feet wide, the longer axis running north-west and south-east. There are two outer enclosures attached to the main building, one being on the north-eastern and the other on the south-western side.

The northern and south-western sides of the ruin show the finest as well as the highest walls. The main entrance was undoubtedly on the north side. There are several isolated buildings surrounding the main ruin, of inferior construction

STYLE OF CONSTRUCTION.

The buildings are made of blocks or small slabs of granite varying generally from 7 to 11 inches in length and $2\frac{1}{2}$ to 5 inches in thickness. The lower courses are generally made of larger blocks. Smaller pieces are used for the ornamental work.

There are no real foundations to the walls; they just begin on any ground firm enough to carry them. As they are seldom more than 8 feet high in any one face the weight is not great. Where additional height was required the walls were raised in tiers, the upper one being stepped back, leaving a ledge varying from 1 to 12 feet in width, widening and narrowing without any apparent reason. No mortar or clay was used in the wall proper, but the top was covered with a layer of clay and ground-up granite.

Although curves and rounded endings-off to the walls were apparently preferred, still angular corners and straight lines could be made when considered advisable.

The batter of the walls varies, but is generally slight. At one point the top actually overhangs the base.

Some walls were made with two faces, the intervening space being filled up with rubble.

The courses preserve their thickness fairly well. In some cases a course widens, and in others disappears.

Boulders of granite lying on the surface were made use of as part of the wall whenever possible.

The most striking feature of the walls is the attempt made to introduce some style of ornamentation. In these ruins the following variations can be seen:—

- 1st. Lines of a different coloured rock (Pl. II, fig. 2; V, fig. 1.)
- 2nd. The chess board, or chequered pattern.

This varies (Pl. V, fig. 3) from the ordinary gap and stone in

one to eight courses, and groups of three spaces with thin blocks in two courses, separated by two thicker blocks.

3rd. The zigzag pattern (Pl. III, figs. 2, 3 ; IV, fig. 2).

4th. The sloping block (Pl. II, fig. 2 ; III, fig. 2 ; IV, fig. 1 ; V, figs. 1, 3) varied by alternating granite with red banded ironstone slabs.

5th. The chevron or fish-bone pattern (Pl. II, fig. 2 ; IV, fig. 1) varied by alternating red and grey blocks, either in patches (Pl. II, fig. 2) or singly and in patches separated by thick granite blocks.

It will be noticed (in Pl. II, fig. 2 ; IV, fig. 1) that the sloping blocks incline respectively to the west and to the east, or in different ways on each side of the main entrance.

As far as I have been able to observe the ornamented patches commence and finish off in an arbitrary or capricious manner and are not confined to any one part of the walls.

DESCRIPTION OF RUINS.

To the south and south-west of the main ruin there are numerous and extensive enclosures, the walls of which seldom exceeded 6 feet in height and were of somewhat inferior construction. As the grass was high no careful examination could be made. They were probably cattle pens or locations for slaves.

The large enclosure (R) on the western side of the ruin is surrounded by a wall considerably destroyed, but in parts still showing a height of 7 feet. It was well built and was ornamented with a band of red stone and also with a course of sloping blocks (Pl. V, fig. 1).

About 100 feet to the north of the main entrance is a roughly built enclosure (M) 75 feet by 90 feet with one entrance on the east side (Pl. I, fig. 2.)

To the north-east of the main entrance and about 155 feet away is a circular platform (N) considerably destroyed, but apparently $4\frac{1}{2}$ feet high and 30 feet in diameter. Behind this there is another enclosure (O) some 80 feet by 60 feet, with two entrances, one on the north-east and one on the south-west.

On the south-west side of the main ruin there is a well built enclosure or platform (P) 95 feet wide by 100 feet long. It is built up on a rather steep slope strewn with granite boulders, some of which have been utilised as part of the walls. Only one entrance can now be seen, outside the main wall. There may have been a communication with the main ruin, but the wall at this point has been pretty thoroughly broken down, and no signs of a doorway can be seen.

About 100 feet from P is the large area (R) 300 feet long by 190 feet wide. It had clearly a main entrance at D, and others may have existed in the parts of wall now broken down. The ground here is flat and good, and this enclosure was probably a garden or cattle pen.

Between P and R there is a mound of ashes, broken bones, potsherds, etc. It is evidently the refuse heap of the later Kaffir occupants of the ruins and is now higher than the top of the wall of platform P. It probably lies over a small ridge or granite boss.

Some 300 feet north-west from the main entrance is another stone construction (H) perched in a commanding position on the precipitous northern face of a granite boss which slopes gradually southwards (Pl. I, fig. 1). The wall is well made, but it apparently did not form a complete enclosure. There is a rather elaborate entrance at H, and some very regular ornamental work (Pl. V, fig. 3).

On the east side of the main ruin there is a large enclosure 120 feet along the wall and 95 feet in depth. It had apparently one gateway on the south-east side. There are indications of interior divisions or walls, but the whole is too much destroyed and grown over by bushes to be properly examined without considerable labour.

DESCRIPTION OF THE OUTER WALLS.

The main approach was evidently on the north side, where there is an arrangement of roughly built slopes and platforms leading up to what is certainly the main entrance (C). This is seen in Pl. II, fig. 1, as a dark gap, and one side is represented in Pl. IV, fig. 3. A long narrow passage running to the centre of the ruin attracted our attention, and a little work spent in clearing away the fallen stones and rubbish showed the remains of two stout posts of hard red wood $5\frac{1}{2}$ feet apart on the west side. The tops of the posts are burnt. They lie partly in recesses carefully built in the wall. On the east side can be seen similar recesses. The opening is 11 feet in width, and goes back 15 feet, where there are signs of another pair of posts, and the passage commences 7 feet in width.

The wall to the east of the entrance is still 8 feet high and is apparently nearly its original height. About 25 feet from the main entrance a chess-board pattern of seven courses commences (Pl. II, fig. 2) in a somewhat irregular manner. Over this and separated from the top by three courses runs a line of dark ironstone, and three courses above this there is another row of dark stones changing suddenly into a course of chevron pattern formed of white and dark stones in patches, the points being to the east. Three courses above the chevron and commencing over the western end is a row of sloping blocks dipping to the west. Four courses above this and more or less over it is a three-course line of chess-board pattern also commencing at the end of a line of dark stones. Two of these bands of dark stones run nearly to the main entrance, but this portion of the wall is built in a somewhat slovenly manner, although it cannot be said that there is distinct evidence that it has been pulled down and rebuilt. The ornamentation cannot be traced eastwards, as the wall is partially destroyed and partly hidden by the fallen stones.

On the western side the walls attain greater height, being in three tiers, the

top being some 16 feet above the base. At about 16 feet from the side of the entrance the walls turn outwards for say 5 feet and then run west for 30 feet to a carefully constructed corner (Pl. III, fig. 2). The first corner is partially filled up by a diagonal wall roughly built.

This section of the wall is ornamented as follows:—At the base of the lower tier there is a row of chevrons spaced off by thicker blocks. The chevrons are formed of alternate dark and white blocks and point to the west. Eight courses above this is a row of sloping blocks (white and dark) dipping to the east. Three courses over this runs a three-course line of chequers.

The upper tiers were no doubt ornamented, but the faces are much damaged now.

To the west of the second corner (Pl. III, fig. 2) we see the first piece of the zigzag pattern commencing near the top and about 3 feet from the corner. It can be traced westwards as far as the wall is intact, but does not appear to have continued right round to the western face (Pl. II, fig. 3). Three courses below the zigzag is a line of sloping blocks dipping east, and three courses below this is a two-course chequer pattern. There is, therefore, no continuity of pattern to be seen in the lower tier. The chevron pattern is also missing to the west of the corner.

The two upper tiers were ornamented, the upper one with a zigzag pattern apparently corresponding to that on the western face. There are patches of zigzag pattern in the middle tier, but the walls are too much destroyed for me to be able to trace if the patches on the upper and lower walls correspond at all.

The western face (Pl. II, fig. 3) is very fine, the tiers being 7 feet, 5 feet and $4\frac{1}{2}$ feet high, standing back each from 12 to 5 feet at the widest part, thus leaving broad platforms or ledges, which, however, narrow considerably at the turn (D).

The upper tier finishes off at a corner, where there were probably steps leading to the top platform. The ornamented courses finish about 3 feet from this corner.

The patches of ornamentation follow more or less regularly along the north and west wall of the building, and are most abundant where the walls are most bold.

The high western wall gradually alters beyond the corner. The upper tier apparently turned eastwards, enclosing the upper platform, about 80 feet in diameter.

The second tier continues southwards for about 50 feet, then turning eastwards to form the second platform.

The bottom tier runs on for about 120 feet, then a part turns east at right angles and forms another platform and part of the inner line of defence. An extension of it ran some 100 feet to the south-west, finishing off at a huge granite boulder which forms one side of the southern entrance.

At the western side of this entrance a well built wall commences. It is

6 to 8 feet high and about 5 feet wide at the top. It runs without a break round the south and eastern side until it butts up against the continuation of the north-eastern wall. Inside the wall is a passage or ditch 8 to 15 feet in width, blocked at both ends. Apparently the idea was to catch the enemy between the outer and the inner walls.

CENTRAL PASSAGE.

This commences at the northern or main entrance and runs about due south (magnetic) for 100 feet with a width of 5 feet to 7 feet. It then turns off a short distance to the south-east. The two walls finish with well made square ends.

The walls of the passage are now about 6 feet high, but there is some rubbish on the bottom.

A large heap of stones blocks the main entrance. It is possible that it was originally covered over with wooden beams carrying a stone parapet.

The recesses in the wall in which the posts are partially imbedded may correspond to what Mr. Bent saw at Zimbabwe and considered as grooves for a portcullis.

PLATFORMS.

The top of the main platform was evidently covered over with cement or fine concrete made of clay and ground-up granite. Treasure seekers have dug a hole near the centre, exposing chiefly loose stones. On the top of the platform are several raised ledges or benches of concrete.

On the platform east of the main entrance there are indications of a large circular dwelling which evidently had hard wood posts built in a cement wall. The same thing can be seen on the platform to the south.

In the enclosure P are the remains of a circular clay wall 10 feet in diameter, with a small hole about 2 feet in diameter in the centre.

On the top of the granite boss at H are remains of three circular clay walls or floors.

It is impossible to say whether these clay or cement structures belong to the same age as the stone walls. Some are of much better construction than others, the better being probably older Kaffir work. The stone wall builders may have used circular dwellings, and the idea would be copied by the natives of the country, although in an inferior class of work.

In the Khami ruins, near Bulawayo, are remains of a superior class of circular dwellings which I am told are similar in character to huts in use at the present day by Kaffirs living near Lake Ngami; on the granite hills near Khami can be seen remains of very inferior circular mud huts built by natives of the present day.

There is a notable absence in the Dhlo-Dhlo ruins (as in all others) of the remains of dwellings and of places of burial corresponding to the number of persons who must have been employed in their erection and occupation.

INDICATIONS OF OCCUPATION.

I was not fortunate to find anything of note in these ruins, except a piece of thin silver plate with an embossed pattern and a few pieces of broken glass, possibly parts of the widely distributed gin bottle partly calcined by the grass fires. I am informed that two small Portuguese cannon and a considerable quantity of silver articles such as would be used by the Jesuit Fathers who would accompany an early Portuguese expedition were also found here, chiefly round the enclosure H. No doubt these ruins were used as a convenient resting-place, but it can be inferred that the expedition left hurriedly.

In the large ash heap I was only able to find pieces of pottery of inferior manufacture, pieces of bones, and teeth of animals, chiefly of the antelope tribe.

I am not aware that any emblems have been found such as those which Mr. Bent discovered at Zimbabwe. The Dhlo-Dhlo ruin, therefore, seems to have been a fortress rather than a temple, and was probably one of a chain of strongholds connected with the main route from the east coast. Sofala Bay was probably the port of entry, as Portuguese records refer to it as being occupied by "Moors," a term which is equivalent to "inhabitants of Africa."

But even if sacred emblems are wanting, it seems that if people of Phœnician origin built these structures the pronounced characteristics of style of building, of general design, and also of the ornamentation used will be sufficient as points of identification with such work in other parts of Africa or of Asia.

One thing is clear, and that is that this class of building is only found in South Africa in the vicinity of gold-bearing districts. Also worked gold is found about them.

There are no definite indications that the occupants were destroyed and any deliberate attempt made to pull down their buildings. The harm that has been done may be fairly ascribed to the ordinary Kaffir in search of material to make his cattle kraal or base of his huts. If the Phœnicians were the builders they may have abandoned the country in the same manner as the Romans left Britain when their mother-country was in the last stages of its existence. If this theory is correct these ruins would be at least 2,300 years old.

It is quite possible that the native occupants of the country would retain some of the ideas of building, of pottery work, and of working the gold mines, but these would gradually die out.

In the Khami ruins are found numerous flakes of quartzitic rock, agate, etc., and roughly formed stone implements, indicating that this locality had been inhabited by an early race before the time of the wall builders. These latter were the workers in gold. There are also found remains of iron assegais and bangles which may be considered as corresponding to the work of the natives of the present day. Considerable care is required to discriminate between these records of different periods.

Mr. Bent in his *Ruined Cities of Mashonaland* attaches great importance to the following points as seen in the Zimbabwe and other ruins :—

- a. That the patterns on the walls were constructed with a special purpose, having always the same aspect, viz., south-east (page 103).
- b. The south-eastern wall is much better built (page 105).
- c. The chevron pattern coincides with the sacred enclosure inside (page 110).
- d. The wall in front of the sacred enclosure was decorated with courses of black slate omitted in the inferior continuation (page 112).
- e. Special attention was paid by the constructors to the curves (page 130).

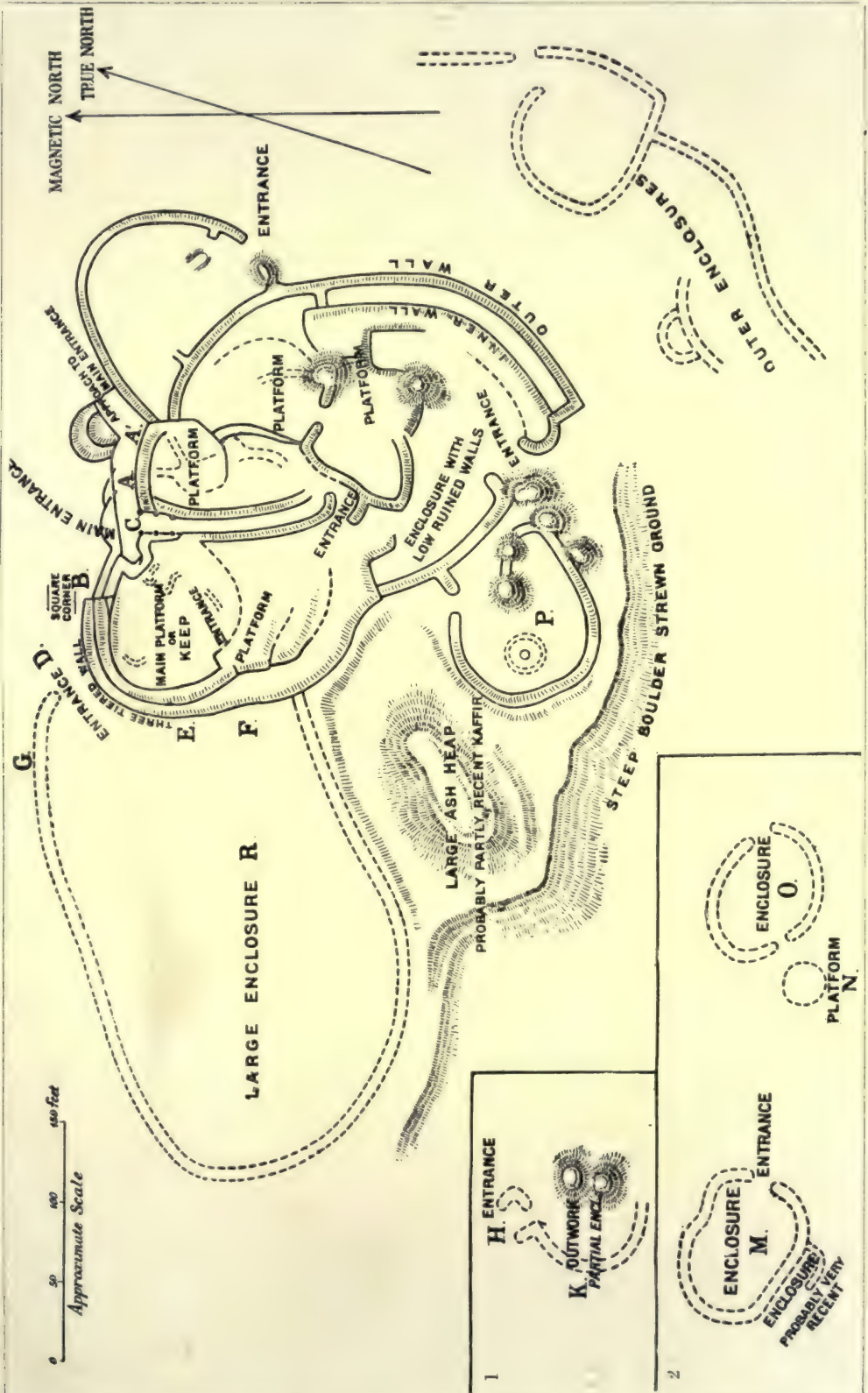
At the Dhlo-Dhlo ruins we find :—

- a and b. The most ornamented and better constructed portion of the building was on the north and north-west.
- c. The chevron pattern runs all round this portion, probably in patches.
- d. Black slate courses are to be seen in all the main walls and also in the wall of the outer enclosure.
- e. The curves of the walls are apparently chiefly influenced by the desire to take full advantage of the ground on which they are built, and by the proximity of boulders.

It seems, therefore, that before any theory can be definitely put forward as to the special significance of any of these points the characteristics of a number of different ruins should be carefully studied and recorded.

DISCUSSION.

The PRESIDENT congratulated Mr. Franklin White on having made such an excellent survey of these interesting ruins while he was engaged on other work. If the secret of their origin is ever to be wrested from the remarkable stone structures that appear to be so widely distributed in South Africa, it will be necessary that systematic surveying and excavating should be organised before it is too late. The operations of irresponsible treasure seekers must inevitably destroy or falsify much of that evidence upon which accurate conclusions can alone be based. It is, to say the least of it, unfortunate that the gold ornaments which the treasure-hunter discovers are melted down without any record being kept of the finds, or without the curators of museums and other collectors having an opportunity of securing specimens. It is also most probable that other objects which have no obvious money value are passed by or destroyed, and in any case the evidence is lost of the association of objects in any one find. The various Governments in South Africa should take all these ruins under their protection and the rifling of treasure should be prohibited. Antiquities such as these are national assets, and they should not be allowed to be frittered away by private exploitation.



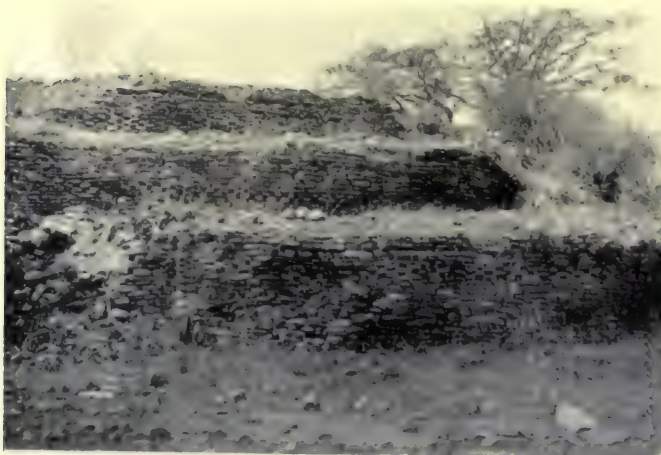
RUINS OF DIHLO-DIHLG, OR MAMBO.



1. NORTH-EAST SIDE.



2. ENLARGED PORTION OF NO. 1.



3. WESTERN FACE.

RUINS OF DHLO-DHLO.



1. NORTH-WESTERN SIDE.



2. ENLARGED PORTION OF NO. 1.



3. NORTH-WEST CORNER FROM EAST.

RUINS OF DHLO-DHLO.



1. PORTION OF NORTH-WEST SIDE.



2. SQUARE CORNER IN NORTH-WEST SIDE.



3. ENTRANCE IN NORTH FACE.

RUINS OF DHLO-DHLO.



1. OUTER ENCLOSURE. (G)



2. ENTRANCE TO OUTER ENCLOSURE. (H)



3. OUTER ENCLOSURE OR GUARD HOUSE. (H)
RUINS OF DHLO-DHLO.

MAORI TATU AND MOKO.

BY H. LING ROTH.

	PAGE		PAGE
1. The words Tatu and Moko	29	12. Pain and Swelling	43
2. General Description	30	13. Tabu	43
3. Regularity of Lines	32	14. <i>Post-mortem</i> Moko	44
4. Women's Tatu	32	15. Renewal of Moko	47
5. Depilation of Beard	34	16. The Object of Tatu and Moko	47
6. Instruments Used and Origin of Moko	35	17. Variety in Face-Design	50
7. Age at Commencement of Operation	38	18. Origin of Tatu and Moko (Native Statements)	51
8. The Operator	39	19. Papuan Element in New Zealand	51
9. Position of Patient	39	20. The Patterns and their Origin	54
10. The Operation	41	21. Comparison with Other Peoples	62
11. Pigment Employed	42		

1. THE WORDS TATU AND MOKO.

BOUGAINVILLE does not appear to mention the word *tatu*, although he must have known the art, for he wrote as follows:—"Men and women dye their loins and buttocks of a deep blue. . . . I cannot say how they do to impress these indelible marks, unless it is by puncturing the skin and pouring the juice of certain herbs upon it as I have seen it practiced by the natives of Canada."¹ The word *tatu* appears to be first mentioned by Cook and Banks in their respective journals when at Tahiti in 1769, and is to be found in its original form *tattoo* in Wharton's transcript of Cook's *Journal of his First Voyage*,² and Hooker's transcript of Banks's *Journal*.³ Parkinson spells the word with an *a* after the *t*, thus *tataowed* and *tataowing*,⁴ and Ellis spells it *tatau*.⁵ The Maories called the operation or design *amoca*.⁶ Joest says the English originally wrote *tattaw* or *tattoo*,⁷ but the former spelling was certainly not used by Cook nor by Banks. According to Hale, "The word *tau*, or *tatau*, from which 'tattoo' is derived [he

¹ *Voyage Round the World*, 4to, Lond., 1776, p. 251

² p. 93. For Cook's First Voyage I have used Wharton only, Lond., 1893; for his Second and Third Voyages I have used Hawksworth. It is a curious fact that in many descriptions of the people met with, Cook and Banks have used almost identical phrases and frequently exactly the same words.

³ Lond., 1896, p. 124.

⁴ *Journal*, Lond., 1773, pp. 25, 90, 96, and 97.

⁵ *Tour in Hawai*, Lond., 1830.

⁶ Banks, *op. cit.*, p. 203.

⁷ *Tätowiren*, Berlin, 1887, p. 8.

says it means marking, p. 354] is applied to it in most of the islands." In New Zealand, however, *moko*, meaning properly "lizard," or "serpent," is used—perhaps in reference to the peculiar curves and spirals of which their tattooing consists¹; but in his vocabulary at the end of the volume he states: "Moko, mo's, *ubiq.* lizard, reptile," and then, "Moko N.Z., the tattooing, probably from its spiral and curving figures."² For this Joest takes him to task, on the ground that the curved lines (*Schlangelinien*) were of late origin.³

2. GENERAL DESCRIPTION.

Cook gives 'but a very short account of the Maories *amoco*, while on the other hand Banks devotes considerable space to its description. His accounts are not only the first, but are also very good, and as such are well worth reproducing. At Poverty Bay he writes⁴: "Their lips were stained with something put under the skin (as in the OtaHITE *tattoo*), and their faces marked with deeply engraved furrows, also coloured black, and formed in regular spirals. Of these the oldest people had much the greatest quantity, and most deeply channelled, in some not less than one-sixteenth part of an inch." On the Thames River,⁵ he writes, the people "had a much larger quantity of *amoca* or black stains upon their bodies and faces. They had almost universally a broad spiral on each buttock, and many had their thighs almost entirely black, small lines only being left untouched, so that they looked like striped breeches. In this particular, I mean the use of *amoca*, almost every tribe seems to have a different custom; we have on some days seen canoes where every man was almost covered with it, and at the same time others, where scarcely a man had a spot, except on his lips, which seems to be always essential."⁷ Three days later at Taoneroa, he says⁸: "One of the old men here showed us the instrument with which they stain their bodies; it was exactly like that used at OtaHITE." Banks sums up his descriptions as follows⁹:—"Both sexes stain themselves in the same manner with the colour of black, and somewhat in the same way as the South Sea Islanders, introducing it under the skin by a sharp instrument furnished with many teeth. The men carry this custom to much greater lengths; the women are generally content with having their lips blacked, but sometimes have little patches of black on different parts of the body. The man, on the contrary, seems to add to the quantity every year of his life, so that some of the elders were almost covered with it. Their faces are the most remarkable; on them, by some art unknown to me, they dig furrows a line deep at least, and as broad, the edges of which are often again indented, and absolutely black. This may be done to make them look frightful in war; indeed, it has the effect of making them most enormously ugly—the old ones especially, whose faces are

¹ *Ethnology*, Philadelphia, 1846, 4to, p. 39.

² *Op. cit.*, p. 316.

⁴ Wharton, p. 219.

⁶ *Ibid.*, p. 203.

⁸ *Ibid.*, p. 205.

³ *Op. cit.*, p. 63.

⁵ *Op. cit.*, p. 186.

⁷ *Ibid.*, p. 204.

⁹ *Ibid.*, p. 231.

entirely covered with it. The young, again, often have a small patch on one cheek or over one eye, and those under a certain age (maybe twenty-five or twenty-six) have no more than their lips black. Yet ugly as this certainly looks, it is impossible to avoid admiring the extreme elegance and justness of the figures traced, which on the face are always different spirals, and upon the body generally different figures, resembling somewhat the foliages of old chasing upon gold or silver. All these are finished with a masterly taste and execution, for of a hundred which at first sight would be judged to be exactly the same, no two, on close examination, prove alike, nor do I remember ever to have seen any two alike. Their wild imagination scorns to copy, as appears in almost all their works. In different parts of the coast they varied very much in the quantity and parts of the body on which this *amoca*, as they call it, was placed; but they generally agreed in having the spirals upon the face. I have generally observed that the more populous a country the greater was the quantity of *amoca* used; possibly in populous countries the emulation of bearing pain with fortitude may be carried to greater lengths than where there are fewer people, and consequently fewer examples to encourage. The buttocks, which in the islands [Society Islands] were the principal seat of this ornament, in general here escape untouched; in one place only we saw the contrary." It is curious that at so early a date it was observed that the methods of marking varied in different parts of the country. Crozet¹ agrees with Banks as regards the face spirals, but he continues; "The designs on the buttocks are always the same; on these parts they trace in equally indelible marks a very neat spiral line, of which the first point is on the centre of the most fleshy part, and successively embraces the whole circumference." Crozet had, however, not seen so much of the country as Banks. According to Maning,² "every man almost without exception is covered with tattooing from the knees to the waist."

The deep furrows mentioned by Banks seem almost to be peculiar to New Zealand, so that we have in these islands two methods of permanent skin-marking. This is specially mentioned by Yate³: "There is a remarkable difference in the tattoo of the New Zealanders, and that of the Navigators', Fiigee, or Friendly Islanders. In the latter, the skin is but just perforated with a small pointed instrument, and the staining-matter introduced; so that, in passing the hand over the part that has been tattooed, the skin feels as smooth, and the surface as fair, as before the operation took place; whilst in the latter, the incision is very deep, and leaves furrows and ridges so uneven, that in some places, when long enough, it would be possible to lay in a pin, which would be nearly buried in them." Bidwill⁴ also refers to this peculiar difference between the *moko* and *tatu*, but according to him the rump would appear to have been furrowed likewise, for, in

¹ English translation by H. Ling Roth, Lond., 1891, p. 39.

² *Old New Zealand*, Lond., 1863, p. 46.

³ *Account of New Zealand*, Lond., 1835, p. 148.

⁴ *Rambles in New Zealand*, Lond., 1841, p. 80.

speaking of the women's *tatu*, he says: "This might be called tattooing in England. It is of the same kind as sailors are so fond of pricking into their arms; but it is a totally different thing from the elaborate engraving on a New Zealander's face or rump, inasmuch as in one case the skin is cut and remains in the same pattern as the stains, and in the other the marks do not at all affect the smoothness of the skin." As we shall see later on, the difference between *moko* and *tatu* is brought about by the use of different instruments.

3. REGULARITY OF LINES.

Several travellers refer to the regularity of the lines of the *moko*. Thus Banks¹ says of a Poverty Bay native: "He was a middle-sized man, tattooed on the face on one cheek only, in spiral lines very regularly formed." Yate² reports: "Nothing can exceed the beautiful regularity with which the faces and thighs of the New Zealanders are tattooed; the volutes are perfect specimens, and the regularity is mechanically correct." While Polack tells us³: "The nice exactitude of the lines represented in the *moko* is scarcely to be surpassed, displaying the fancy and taste of the artist." These statements, judged by the results attained on specimens of preserved *mokoed* heads in our museums, are somewhat overdrawn. Taking into consideration the difficulty of operating on an uneven surface of various resistance (according as there is bone near the surface or not), the lines may be considered tolerably regular.

4. WOMEN'S TATU.

The *tatu* on the women was not extensive and therefore considerably less than on the men. In Queen Charlotte's Sound in February, 1777, Anderson reported of the women that they "have the puncture only on their lips or a small spot on their chins,⁴ which is practically identical with what Banks and Cook⁵ said seven years before. Angas⁶ and Jno. Savage⁷ also speak of the small amount of *tatu* on the women's faces. Rutherford's account⁸ is, "that they have a figure tattooed on the chin, resembling a crown turned upside down; that the inside of their lips is also tattooed, the figures here appearing of a blue colour, and that they have

¹ *Op. cit.*, p. 184.

² *Op. cit.*, p. 148.

³ *Manners and Customs of the New Zealanders*, Lond., 8vo, 2 vols., 1840, II, p. 45.

⁴ Cook (Hawksworth), *Third Voyage*, book I, chapter viii.

⁵ *Op. cit.*, p. 219.

⁶ *Savage Life*, Lond., 1850, I, p. 316.

⁷ *New Zealand*, Lond., 1807, p. 48.

⁸ p. 144. The account of Rutherford's adventures is incorporated in the well known little work entitled *The New Zealanders* (Lond., 1830, 12mo), now said to have been written by Professor G. L. Craik. Rutherford fell among the Maories in 1816. Archdeacon Williams (*Trans. N.Z. Inst.*, XXIII, 1890, p. 460) throws doubt on Rutherford's story, apparently because he, the Archdeacon, is unable to trace any vessel named *Agnes* from which Rutherford states he was captured. It is not at all improbable that Rutherford was a runaway sailor, and if so, he would naturally try to hide the manner of his flight, but that is not sufficient to invalidate the correctness of his story.

also a mark on each side of the mouth resembling a candlestick, as well as two stripes about an inch long on the forehead, and one on each side of the nose." Bidwill, writing in 1838,¹ reports that he saw a woman "tattooed behind like the men. It is a very rare thing for women to be tattooed anywhere but about the lips and chins, and this was quite a curiosity. I used to think it rather ornamental in the men; what its use can be in a woman I cannot imagine, as they are always covered. The women are often quite covered with blue marks. . . . I have seen the arms and bodies of the New Zealand women so covered with these powerful blue marks, that they looked as if they had on them a tight-fitting chintz dress." At Banks Peninsula, Shortland² gives a description of a funnily tatued woman: "One half of her face was tattooed in every respect like that of a man, while the other had no more marks than her sex entitled her to; so that two persons, who stood opposite each other, each viewing a different side of the face in profile, while she, perhaps, sat wrapped in her blanket, with a pipe in her mouth, would have pronounced the object to be a man or a woman, according to the circumstance of his position. I afterwards met with several other old women of this tribe, who had similarly engraved on their faces many of the marks, which in the north island I had never seen but on males." However, he adds³: "The women have usually merely the lines on the lips, and a scroll depending from the angles of the mouth, the fine blue lines, or scratches, which are often to be seen on their cheeks, arms, and breasts, being the offspring of each person's fancy." According to Dieffenbach⁴: "The girls, as soon as they arrive at puberty, have their lips tattooed with horizontal lines; to have red lips is a great reproach to a woman. With females, in many cases, the operation ceases here, but more frequently the chin is tattooed, especially in the Waikato tribe, and the space between the eyebrows, much resembling the tattoo of the modern Egyptians. In some rare cases it extends over the angles of the mouth. I have, indeed, seen a woman whose whole face was tattooed." From this it would appear that in woman the tatu was a sign of marriageableness, and in fact Colenso⁵ affirms this to be the case. He says to have a husband a woman must have the lips tatued, as red lips are abhorred and black ones considered the perfection of feminine beauty: "In the female it was confined to the lids, chin, between the eyes, and a little up the forehead, and on the back part of the leg from the heel to the calf; the three last-mentioned being always indicative of rank. The women, also, often got themselves irregularly marked on the hands, arms, breasts, and face with small crosses, short lines, and dots. A very few women the writer has seen with tattooed faces just as a man; these belong to southern tribes, some of whom had a very different style of tattooing (such as is shown in *Cook's Voyages*, plate 13,

¹ *New Zealand*, Lond., 1807, p. 80.

² *Southern Districts of New Zealand*, Lond., 8vo, 1851, p. 16.

³ *Ibid.*, p. 18.

⁴ *Travels in New Zealand*, Lond., 8vo, 2 vols., 1843, II, p. 35.

⁵ *Trans. N.Z. Inst.*, I, 2nd edition, 1875, p. 356.

4to ed.).” This leg tatuing was observed by Kerry Nicholls¹ among the Tapur-vacharuru women, who “follow the peculiar custom, which I have not seen elsewhere, of tattooing the legs as well as the lips in thin cross lines of a dark blue colour.” It is also mentioned by Angas: “In a very few instances I have observed women, whose ankles, from the heel upwards, have been tattooed with ornamental spiral lines.”² There was also some body tatuing or perhaps moko on the women, for D’Urville relates³ that “Tuao showed me his wife, who was being further mokoed on her shoulders. One half of her back was already furrowed with deep designs similar to those which ornamented the face of the parents of Koro Koro, and a slave was decorating the other half in the same style.” Women evidently considered it essential to be tatued, for, as Darwin relates,⁴ at Waimata “the wives of the missionaries tried to persuade them [the women] not to be tattooed; but a famous operator having arrived from the south, they said, ‘We really must just have a few lines on our lips; else when we grow old our lips will shrivel, and we shall be so very ugly.’” This reminds one of the papeeta or white face mentioned by Taylor. According to De Blosseville the women of the southern portions of New Zealand looked upon tatuing as a prerogative of nobility.⁵ Scherzer⁶ gives some stanzas of a song showing that a red-lipped and therefore untatued woman was considered ugly. With regard to Bidwill’s account of body tatuing we may here quote Taylor,⁷ who says: “The ladies had their lips and chins operated upon, with a little curl at the corner of the eye. Frequently their persons also were covered with small strokes of tattooing; these might be called beauty patches, such as the ladies used to wear on the face made of a bit of court plaster, which were once thought ornamental.” Is Taylor referring to the *tangi*, as does Angas⁸ when he says: “With the women the tattooing of the face only extends to the lips and chin; but they disfigure their breasts and arms with blue lines, which are the marks of their *tangi*, or lamentations for their deceased relations. These incisions frequently run in parallel lines, about a couple of inches in length, and are cut with sharp shells, and dyed, in a similar manner to the lines upon the face, with a mixture of carbonised Kauri resin.” Have the blue marks covering the women’s body, mentioned by Bidwill, anything to do with *tangi*, or has the *tangi* been at the bottom of the whole system of Maori tatu and moko?

5. DEPILATION OF BEARD.

“To set off the *moko* to advantage, it was necessary to give up the beard, which was not considered in the light of an ornament. In former days, a pair of mussel shells were generally employed, but since their acquaintance with Europeans, a pair of large tweezers, an inch and a half wide, and three or four inches long, will

¹ *King Country*, Lond., 1884, p. 137.

² *Astrolabe*, II, p. 450.

³ *Astrolabe*, III, p. 693.

⁴ *Voyage of the “Novara,”* Lond., 1860, III, p. 113.

⁵ *Op. cit.*, p. 150.

⁶ *Op. cit.*, I, p. 316.

⁷ *Journal*, Lond., 1839, p. 509.

⁸ *Op. cit.*, I, p. 316.

generally be seen hanging from the garment or neck; and whenever the gentleman can find no other employment, he will occupy himself with them."¹ Kerry Nicholls also mentions that depilation was practised before tatuing, and Robley relates that in 1864-66 he "took several sketches of natives showing moko on the face with hair, for though the practice of moko was then fairly vigorous, yet the growth of beard and moustache was common among the natives, with the exception of the older men. The older men being well tattooed never used to wear hair on the face."² Cruise, who published his book in 1823, gives a portrait of the chief Tetoro, whose face is fully tatued with a full-grown beard.

6. INSTRUMENTS USED.

When Banks says, as we have seen above, that he was shown a tatuing instrument and that it was exactly like that in use in Otahite, he was obviously unaware that the Maories used a variety of instruments, and also that to obtain the deep furrows described quite a different instrument was necessary from the one provided with a series of sharp points or teeth. Our first authority for a description of this special instrument is John Rutherford. He describes it as "made of bone, having a sharp edge like a chisel and shaped in the fashion of a garden hoe."³ He adds⁴: "They employed, however, various instruments in the course of the operation, one which they sometimes used being made of a shark's tooth, and another having teeth like a saw. They had them also of different sizes to suit the different parts of the work." Marsden,⁵ writing in 1819, says the operation "was performed with a small chisel made of the wing-bone of a pigeon or wild fowl. This chisel was about a quarter of an inch broad, and was fixed in a handle, four inches long, so as to form an acute angle at the head; something like a little pick, with one end." Next we have Cruise,⁶ who tells us: "The point of the tattooing chisel was about half a quarter of an inch wide; it was made of the wing-bone of an albatross, and fastened in a transverse wooden handle. . . . As the lines of the amoko become contracted, a narrower instrument was used." D'Urville,⁷ writing in 1827, tells us: "The instrument is composed of the bone of an albatross set at right angles to a small wooden handle 3 or 4 inches long, having the shape of a veterinary's lancet. The bone has sometimes simply a cutting edge, at other times flattened and furnished with several sharp teeth like a comb." Yate, writing eleven years after Cruise, merely refers⁸ to the instrument as a "small chisel of very rough workmanship." But he also tells us⁹ an interesting fact: "At the southward, when you come as far as Waiapu, or the East Cape, you find the cuts much deeper on the nose and forehead, and in all parts of the face much broader. The reason they assign for this is that theirs

¹ Taylor, *op. cit.*, p. 151.

² *Op. cit.*, p. 135.

³ *Missionary Register*, Lond., 1822, p. 252.

⁴ *Journ.*, 2nd edition, Lond., 1824, p. 136.

⁵ *Op. cit.*, p. 149.

⁶ *Moko*, Lond., 4to, 1890, p. 30.

⁷ *Ibid.*, p. 136.

⁸ *Op. cit.*, II, p. 448.

⁹ *Ibid.*, p. 151.

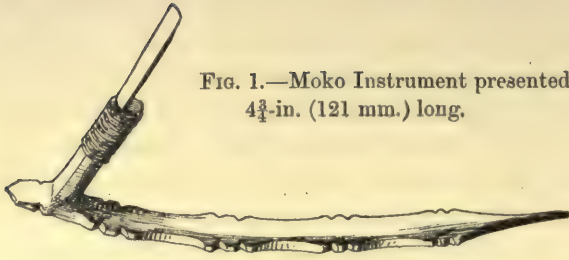
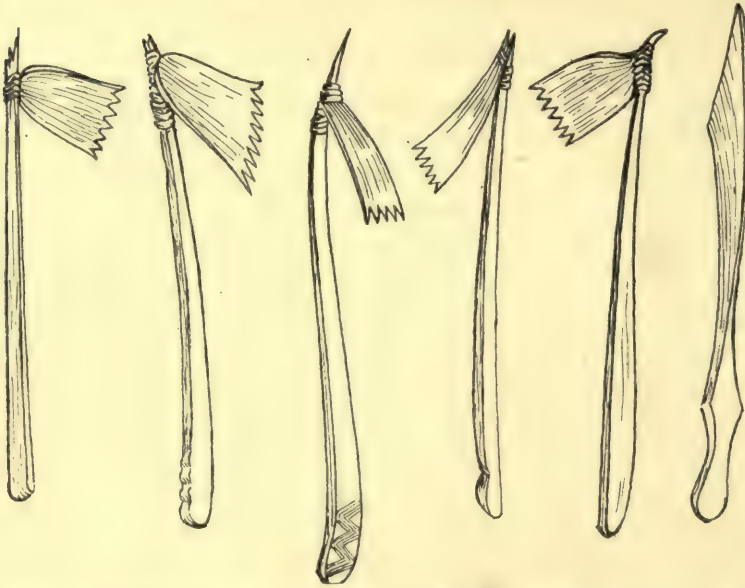
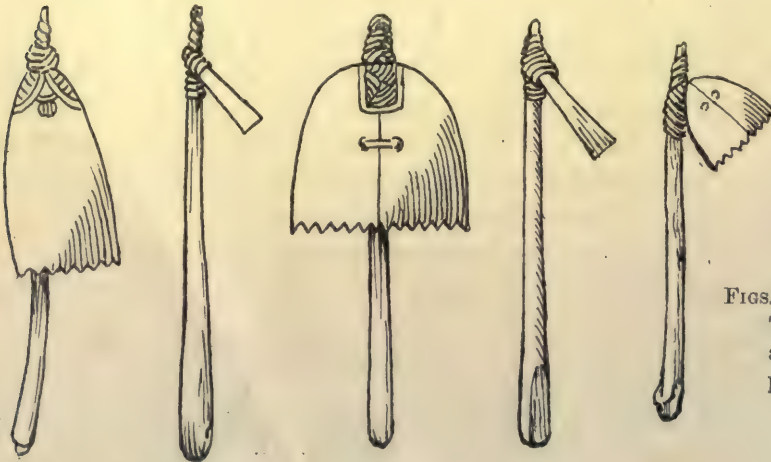


FIG. 1.—Moko Instrument presented to Brit. Mus. by Sir Geo. Grey, 1854, 4 $\frac{3}{4}$ -in. (121 mm.) long.



FIGS. 2-7.—Maori Tatu Instruments, after Craik (New Zealanders). They bear a close resemblance to those from Tahiti (*see* Banks' remarks above). Compare Fig. 7 with the mallets Figs. 14 and 16.



FIGS. 8-12.—Moko and Tatu Instruments after Polack (L. p. 45).

are purely native instruments, made of stone; whilst the Bay-of-Islanders have latterly introduced iron, which is capable of being made much sharper, and consequently of inflicting a wound without striking so hard a blow, or causing so deep or broad a furrow." Polack, who was in New Zealand from 1831 to 1837,¹ says the instrument is formed of bone or hard wood, fashioned like a chisel." Farther on² he depicts five instruments; two are chisel adzes, while three are toothed adzes similar to instruments used in Tahiti, etc. Shortland, writing in 1843-4 near Banks Peninsula, merely refers to the instrument as "a very small chisel"³; while Dieffenbach⁴ appears to be the first to give the native name of the instrument, describing it as "the sharp bone of a bird," or "a small chisel called *uhi*." As a last authority we may quote Taylor, who, when he had been about fifteen years in New Zealand, wrote: "The *uhi* or instrument used was a small chisel made of the bone of an albatross, very narrow and sharp."

It is curious that not one of the above writers, excepting Banks and Rutherford, refers to the instruments provided with pricks for making real tatu similarly to that in vogue elsewhere in the Pacific. It is very curious that all these writers refer to the instrument as a chisel, and while one can hardly suppose that the earlier writers copied one from another, yet one cannot but think that the later writers had in their minds what the earlier ones had written, for with the exception of the vertical cutting portion (*i.e.*, vertical when in operation), the instrument does not look like a chisel at all nor is it held like a chisel, although, on the other hand, it is driven like a chisel. To compare the instrument with a garden hoe (in miniature, of course), as Rutherford does, or to a model of an adze would be more correct than comparing it to a chisel. The only reason for calling it a chisel is that another tool, the mallet, was necessary for using it. A chisel has not a series of sharp points. With regard to Yate's statement as to the introduction of iron Robley remarks⁵: "When iron tools were introduced much finer work became possible than with the bone or tooth instruments"; but he adds: "In the earliest days chisel work was the only method employed in tatuing; but later on, the system of pricking was introduced, and allowed the artist far more scope for his elaboration of detail." Whether the introduction of iron tools would make finer work possible would depend largely upon the fineness of the iron tool, and as to the priority of introduction of either the chisel or the pricker, this would not be easy to prove. The earliest describers, Banks and Crozet, mention practically both tatu and amoko, for Banks speaks of the pricking instruments, which, however, do not make the tatu, and of the furrows (*moko*), which are, however, not made by the prickers, and Crozet speaks of the engraved faces made by means of pricking! If the Maories brought with them the tatuing from the east they had prickers in all probability, and as the art developed their vain desire to show how they could bear pain might have been the cause of the introduction of a more

¹ *Journ.*, 2nd edition, Lond., 1824, II, p. 44.

² *Ibid.*, II, p. 45.

³ *Op. cit.*, p. 18.

⁴ *Op. cit.*, II, p. 33

⁵ *Op. cit.*, p. 50.

lacerating instrument—that is, if the chisel cause more agony than the pricker. If, on the other hand, *tatu* developed from *moko*, which developed from *tangi*, the possibility of which was suggested on p. 34, then Robley would be correct.

7. AGE AT COMMENCEMENT OF OPERATION.

As mentioned above by Cruise,¹ the young men were commenced to be operated upon at about twenty years of age. Polack merely states² it was “at an

early age.” In Middle Island “the people submit to this operation at a much earlier age; and many of them are fully tattooed about the face before they have arrived near the prime of life.”³ Sir Walter Buller, however, told Robley⁴ that it was the universal rule amongst Maories never to commence *moko* until a subject was adult, and that, as a matter of fact, he had never seen a Maori boy or girl with a *tatued* face. In commencing the operation “the first attempt is applied to the lips, then the forehead, cheeks, etc., are submitted to the same process.”⁵ “There were regular rules for tattooing, and the artist always went systematically to work, beginning at one spot and gradually proceeding to another, each particular part having its distinguishing name.”⁶ Taylor gives a list of nineteen such names, Dieffenbach seventeen, and Shortland twelve such names from Middle Island; the names are

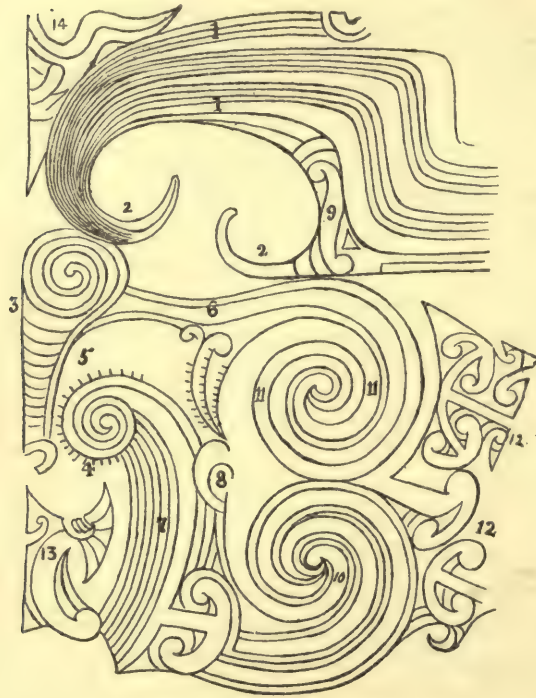


FIG. 13.—Moko pattern from Banks' Peninsula, after Shortland, to show nomenclature. In the original No. 10 is not placed so I have indicated it according to Dieffenbach's description “on the lower maxilla where the masseter lies.” For explanation, see p. 64.

almost identical. As Sidney H. Ray writes me about them: “Names like *ngu*, *wero*, *repa*, seem to suggest that the patterns were named from animals, or else merely descriptive of their location, as *pu-karu*, *pu-taringa*, *kauwae*, etc.”

¹ *Journ.*, 2nd edition, Lond., 1824, p. 264.

² Yate, *op. cit.*, p. 151.

³ Polack, *op. cit.*, p. 144.

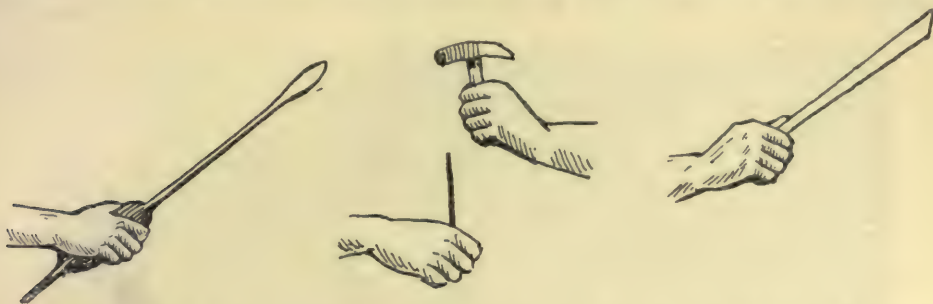
⁴ *Op. cit.*, p. 45.

⁵ *Op. cit.*, p. 38.

⁶ Taylor, *op. cit.*, p. 153

8. THE OPERATOR.

Earle describes a professor of *tatuing* as follows¹: "He was considered by his countrymen a perfect master in the art of tattooing, and men of the highest rank and importance were in the habit of travelling long journeys in order to put their skins under his skilful hands. . . . This 'professor' was merely a *Kooky* or slave, but by skill and industry he raised himself to an equality with the greatest men of the country." He seems to have been handsomely paid. According to Yate²: "There are persons in New Zealand whose time is principally occupied in



FIGS. 14, 15, 16.—Mallets and methods of holding them. Fig. 14 after Earle; there appears to be some cloth wrapped round the handle to give it a firmer grip; in shape it is very like a Tahitian mallet illustrated by Parkinson. Fig. 15 after Polack; the woodcut is very poor and does not show the pricker; the mallet is of European form. Fig. 16 after Robley.

performing this painful operation. They go about from village to village for the purpose, and are most amply rewarded for their services." "The natives of the East Cape are accounted as particularly clever in this art, and when slaves have been acquainted with it, their advancement from bondage has been immediate."³ Referring to a youth being *tatued*, Dieffenbach⁴ says: "The *Tohunga* (priest) is charged with this function; but it is not everyone that is able to perform the operation. Some of the chief masters of the art are slaves, and the Waikato tribe are celebrated for their skill in the perfection of the designs." According to Angas⁵: "The *Tohunga*, or priest, is most generally the operator in the ceremony of tattooing, he being supposed to excel in the art of carving both on wood and on flesh." But, strange to say, according to Savage⁶ these *tohunga* themselves "have only a square patch of tattooing over the right eye."

9. POSITION OF PATIENT.

Rutherford and his companions, when operated upon, were held down by five or six men each, and appeared to have two operators each, but then theirs was probably an exceptional case, the Maories not knowing how the Europeans would

¹ *Narr. of Nine Months' Residence in N.Z. in 1827*, Lond., 8vo, 1832, pp. 137-8.

² *Op. cit.*, p. 149.

³ Polack, *op. cit.*, II, p. 50.

⁴ *Op. cit.*, II, p. 33.

⁵ *Op. cit.*, p. 314.

⁶ *Op. cit.*, p. 47.

take to the operation. According to Yate: "When anyone is desirous of being tattooed, he lies down, with his head between the legs of the operator, and his feet against something firm, for the purpose of pressure. The lines upon his face are then traced out with a piece of charcoal; these marks are, however, soon effaced by the streams of blood flowing from the wounds." Cruise thus describes the preparations of a native about to be *mokoed*: "He lay upon his back, with his head resting upon the knees of the operator, who sat upon the ground, and for whose guidance the intended form of the *amoko* had been previously traced in black lines upon the patient's face."¹ Polack's testimony is similar:² "The head of the *patient* rests for convenience on the knees of the artist. The pattern about to be



FIG. 17.—The moko professional, Aranghie, at work. After Earle.

engraved is painted in lines, by a small piece of stick dipped in powdered charcoal and water." According to Savage³ the device was marked out with a piece of burnt stick or red earth. D'Urville⁴ speaks of a preparatory design. "The pattern was first drawn either with charcoal or scratched in with a sharp-pointed instrument," says Taylor,⁵ and he continues: "The person operated upon was stretched all his length on the ground, and to encourage him manfully to endure the pain, songs were continually sung to him. . . . This song was chiefly to remind the gentleman of the duty he owed to the operator, who, not having any regular professional charges, chiefly depended on the liberality of his patient, who

¹ *Op. cit.*, p. 136.

² *Op. cit.*, II, p. 44.

³ *Op. cit.*, p. 46.

⁴ *Op. cit.*, II, p. 448.

⁵ *Op. cit.*, p. 152.

was expected not only to feed him with the best, but to make him a very handsome present as well. And when the operator suspected that he should not be remembered, he frequently became very careless in his work, and rendered the person an object for life. Some of the *mokos* are very coarsely done, whilst others are finished with an artist's touch, by which we are able to judge of the way they have severally paid the owner of the sounding chisel." As mentioned above, however, the coarseness and fineness depended much upon the tools used. Earle gives an illustration of a patient lying comfortably on the ground leaning on one elbow, while his thigh is being tatued. Polack¹ illustrates a patient with his head similarly on the operator's lap, and Robley² shows a very like group. When D'Urville³ went to see the shoulder *mokoing* of Tuao's wife she was lying on her belly.

10. THE OPERATION.

The flow of blood, naturally very great, the operators "kept wiping off with the side of the hand, in order to see if the impression was sufficiently clear. When it was not they applied the bone a second time to the same place."⁴ During the operation on Rutherford, Aimy's (the chief's) eldest daughter several times wiped the blood from his face with some dressed flax. According to Marsden:⁵ "One end of this stick (*uhi*) was cut flat like a knife, to scrape off the blood as it gushed from the cuts;" while, according to Yate,⁶ "the blood is constantly wiped away with a little dressed flax, tied upon the forefinger of the left hand." Sometimes the puncturer carefully wipes away the blood with a "piece of scraped flax or the end of his garment."⁷ "One can understand," writes D'Urville,⁸ "that blood must flow in abundance, but the operator takes care to wipe it off with the back of his hand or with a small wooden spatula. According as the skin is gashed the colour or the *moko* is introduced into the cut by means of a small brush." But the brush was of course a European innovation. There were thus different methods in use to get the pigment inserted into the skin or flesh. When Rutherford was *mokoed* the instrument was dipped into the liquid, and then applied; Marsden, Cruise, Yate, and Dieffenbach all speak of this dipping; but Polack⁹ says: "Charcoal is afterwards [*i.e.*, after the striking] powdered and let into the wounds;" while, according to Taylor:¹⁰ "The operator held in his hand a piece of *muka* (flax) dipped in the pigment, which he drew over the incision immediately it was made." Angas¹¹ likewise says the charcoal was rubbed in after the pricking had brought forth blood. All accounts agree as to the method of holding the *moko* instrument in the one hand while it was struck "with a small piece of wood"¹² or "with a stick about one foot long, in the same manner as a

¹ Polack, II, p. 43.

² *Op. cit.*, II, p. 451.

³ *Op. cit.*, p. 251.

⁴ Polack, *op. cit.*, II, p. 44.

⁵ *Op. cit.*, II, p. 44.

⁶ *Op. cit.*, p. 316.

⁷ *Op. cit.*, p. 51.

⁸ Rutherford, *op. cit.*, p. 135.

⁹ *Op. cit.*, p. 149.

¹⁰ *Op. cit.*, II, p. 448.

¹¹ *Op. cit.*, p. 151.

¹² Rutherford, *op. cit.*, p. 135.

farrier opens the vein of a horse with a fleam,"¹ or "a bit of stick not longer than a common pencil,"² or "a light tap is given it with a small mallet, *mahoe*."³ Dieffenbach, however, says the chisel was driven into the skin by the hand.⁴ The tapping makes the tool cut into the flesh as a knife would do,⁵ or in the words of Marsden,⁶ "the chisel appeared to pass through the skin at every stroke, and cut it as a carver cuts a piece of wood." Polack⁷ merely says the tool cuts deep into the flesh; and D'Urville tells us: "The instrument is applied against the skin, and struck with a small stick on the back of the chisel to make it penetrate into the epidermis, and to gash sufficiently in following the prepared design"⁸; while Taylor makes the following extraordinary statement, namely, that the tool is driven "quite through the skin, and sometimes completely through the cheek as well, so that when the person undergoing the operation took his pipe, the smoke found its way out through the cuttings."⁹

11. PIGMENT EMPLOYED.

There is considerable difference in the records as regards the material of the pigment used. When Rutherford was mokoed, a piece of charcoal was rubbed upon a stone with a little water until a thickish liquid had been produced.¹⁰ According to Marsden¹¹ "the liquid was made from a particular tree, and afterwards mixed with water, which communicates the blackness"; Cruise speaks¹² "only of charcoal and water"; according to Yate¹³ the pigment "is merely the root of the flax burnt to charcoal, reduced to powder and mixed with water"; according to Dieffenbach¹⁴ the pigment, called *narahu*, is prepared by carbonising the resin of the Kauri pine. Gunpowder appears to have been substituted in Polack's time.¹⁵ Colenso¹⁶ says: "For the purposes of tattooing they used various kinds of charcoal, both animal and vegetable, obtained from several peculiar sources, and manufactured in a highly curious manner with much labour and skill," the peculiar sources being described by Taylor as follows¹⁷: "The substance generally used as colouring matter is the resin of the *kauri* or *rimu*, which, when burnt, is pounded and converted to a fine powder. At Taupo, I went to see the place where this pigment was manufactured. A narrow pit was sunk at a little distance from a precipice, and from the face of the cliff a passage was cut to the bottom of it, over the mouth of which pieces of wood containing the resin were burnt, and the residuum, falling within, was taken away by means of the passage." Scherzer's description gives us

¹ Marsden, *op. cit.*, p. 251.

² Cruise, *op. cit.*, p. 136.

³ Yate, *op. cit.*, p. 149 and Taylor, *op. cit.*, p. 151.

⁴ *Op. cit.*, II, p. 33.

⁵ Rutherford, *op. cit.*, p. 135.

⁶ *Op. cit.*, p. 251.

⁷ Polack, *op. cit.*, II, p. 44.

⁸ D'Urville, *op. cit.*, II, p. 448.

⁹ *Op. cit.*, p. 151.

¹⁰ *Op. cit.*, p. 135.

¹¹ *Op. cit.*, p. 252.

¹² *Op. cit.*, p. 136.

¹³ *Op. cit.*

¹⁴ *Op. cit.*, p. 34.

¹⁵ *Op. cit.*, II, p. 44.

¹⁶ *Trans. N.Z. Inst.*, XIV, 1881, p. 61.

¹⁷ *Op. cit.*, p. 151.

another method of preparation¹: "The necessary colouring stuff, *ngarahu*, is made from the soot of the wood, when burnt, of the Kauri fir (*Dammara Australis*), which is collected in the leaves of the Ti-reed (*Cordylive Australis*), and is prepared with an infusion of the bark of the Hinau (*Eleocarpus Hinau*) in the form of small cones." Edge-Partington,² in describing the pumice stone boxes in which the pigment was kept, says: "The pigment was a mixture of lampblack and either milk or fat. A dog starved for the purpose was fed upon this. His excreta were re-mixed and buried in these boxes until wanted." Mr. Chas. Smith Wangauni was his informant.

12. PAIN AND SWELLING.

We can well believe Rutherford when he says the pain was very acute; but he says he neither moved nor uttered a sound, while his comrades moaned dreadfully.³ Cruise tells us⁴ that the pain was borne by the natives "with surprising fortitude" and "with perfect composure." Marsden,⁵ Yate,⁶ Cruise,⁷ and Polack⁸ ascribe the incompleteness of the mokoing to the intense pain and inflammation, which necessitate considerable intervals of repose. Rutherford, who was four hours under the operation, was, in consequence, blind for three days, and did not wholly recover for six weeks, while Marsden observed⁹ "proud-flesh rising in some parts which had been cut almost a month before." According to Dieffenbach¹⁰: "The persons operated upon never allow the slightest expression of pain to escape them. . . . The tattooing of the lips is the most painful part of the operation." And Polack says¹¹: "The victim to this curious fashion lies recumbent, wincing and writhing at every stroke given by the operator, the body quivering under the torments inflicted." "Tuao's wife seemed to suffer very much, and the blood streamed abundantly from her wounds; nevertheless she did not even sigh, merely looked at me with a smile without disturbing herself or the woman carrying out the important operation."¹² "To tattoo a person fully is therefore a work of time, and to attempt to do too much at once endangered the life. I remember a poor *porangi*, or insane person, who, during the war, was tattooed most unmercifully by some young scoundrels. The poor man's wounds were so dreadfully inflamed that they occasioned his death."¹³

13. TABU.

When Rutherford and his comrades were mokoed they were tabued also.¹⁴ "During the time that anyone was being tattooed, all persons in the *pa* were *tapu*,

¹ *Trans. N.Z. Inst.*, XIV, 1881, II, p. 111.

² *Album*, Series III, No. 173.

³ It may in a considerable measure have been due to his hardness that Rutherford was the only one of the European party who ultimately escaped from the Maories.

⁴ *Op. cit.*, pp. 136, 264.

⁵ *Op. cit.*, p. 252.

⁶ *Op. cit.*, p. 149.

⁷ *Op. cit.*, p. 264.

⁸ *Op. cit.*, II, p. 45.

⁹ *Op. cit.*, p. 252.

¹⁰ *Op. cit.*, II, p. 34.

¹¹ *Op. cit.*, II, p. 43.

¹² D'Urville, *Op. cit.*, III, p. 451.

¹³ Taylor, *op. cit.*, p. 142.

¹⁴ *Op. cit.*, p. 137.

until the termination of the work, lest any evil should befall them.”¹ Best tells us of the Tuhoe or Urewera tribe²: “When the daughter of an important chief had her lips and chin tatued, a day was set apart on which the tribe would assemble to view the work of the artist. A party would be sent forth some time before to secure a member of another tribe ‘for sacrifice and to give strength to the tribe by eating.’” Earle remarks³ on this tabu that one evening strolling through a village where many chiefs were being mokoed, “it appeared as though some dreadful disease had suddenly struck the greater part of the inhabitants and deprived them of the use of their limbs,” for being all “under the law, they could not feed themselves with their hands.” Many museums possess one or more specimens of the funnel by which men were fed when undergoing the operation of moko.

14. POST-MORTEM MOKO.

I have not been able to trace any reference to post-mortem tatuing by any early traveller in New Zealand, although it is hardly likely that its occurrence should not be recorded somewhere. In so far as my studies have carried me, the first mention of it at all was made by Garriek Mallory,⁴ where, describing two New Zealand preserved heads, he remarks: “Whether any mechanical work was performed upon the heads after death is not positively known, though from the general appearance of the work it would be suggested that the sharp creases or grooves was [*sic*] done subsequent to the death of the individual.” It must be remembered, however, that Banks noticed the grooves on the living in 1769. Robley gives a good many illustrations of post-mortem moko and says⁵: “Post-mortem moko is easily distinguished by the non-appearance of the subcutaneous colour, and where moko was incomplete at the time of death the pattern was often added to. But the difference of the cuts on the live and on the hardened flesh is easily recognised. Again, sometimes the pattern scored in life has been recut deeper into the leathery surface after death. These new marks on the old lines are also readily distinguished. In one of the British Museum specimens this post-mortem tracing is of a totally different pattern from that cut during life, and this is the more regrettable as the original pattern was not only good and complete and well preserved, but the new one is carelessly worked or scratched, and looks pale over the blue of the older and real moko.” In answer to my inquiries General Robley informs me: “There are heads that were tatued in life, and then these real lines with subcutaneous colour in them which need not have been touched were incised to make patterns appear deep as in life, for the stretched and dried skin would cause the grooves to flatten out.” While in some cases the post-mortem cuts are clearly distinguishable in the leathery surface, in other cases where they are not cut so deep it is not easy to distinguish them, and

¹ Taylor, *op. cit.*, p. 152.

² *Trans. N.Z. Inst.*, XXX, 1897, p. 38.

³ *Op. cit.*, pp. 144-5.

⁴ *Fourth Annual Report*, Bureau of Ethnology, Washington, p. 76.

⁵ *Op. cit.*, p. 189.

when all is said the examination can only be a superficial one and therefore not wholly reliable.

To make an attempt to get the question settled whether there was any post-mortem moko, with the kind permission of Professor Chas. Stewart, I asked Mr. Samuel G. Shattock, the pathological curator of the Museum of the Royal College of Surgeons and Joint Lecturer on Pathology and Bacteriology at St. Thomas's Medical School, London, to examine what appeared to be post-mortem moko on a portion of the skin of the forehead of a New Zealander's head (No. 1010) in the Museum. Mr. Shattock reports as follows:—

“With the object of endeavouring to determine whether the moko in this



FIG. 18.—Maori head in Museum Royal College of Surgeons (No. 1010), showing *post-mortem* clear incised work overlapping original moko. Mr. Shattock's examination was made from this specimen.

region had been done after death, a microscopic examination was made of a portion of the skin by means of sections cut at right angles to the direction of one of the gaping sharply edged incisions. The dried skin was first soaked in water and afterwards passed through increasing strengths of alcohol; the sections were cut upon a freezing microtome and stained with Ehrlich's Hæmataxylol and eosin. In

these sections all the chief structures of the skin are easily recognisable; the epidermis, however, is wanting.

"On either edge of the incision the fibrous bundles of the corium terminate quite abruptly; there is no trace whatever of repair in the form of exudation or granulation-tissue. Blood has escaped into the incision, and the extravasation extends a considerable distance laterally between the bundles of fibrous tissue, and even amongst the cells of fat.

"Is the amount of extravasation compatible with a post-mortem moko, or does it prove that the process was carried out during life? In order to test this question I made the following observations:—Dec. 2, 1899; weather mild. I lightly struck a sharp chisel, a quarter of an inch broad, into the scalp (a little way above the ear) of a well-developed man who had died sixteen hours previously. The scalp and parts about the neck were congested. Blood at once oozed freely out of the wound and continued to do so. I pressed and manipulated the parts without using violence, and then excised the piece with the incision in its centre, pinned it on filter paper and allowed it to dry in a warm room. When dry it was placed in alcohol, and some days afterwards cut and stained as in the other case.

"In another body in which there was no visible congestion I made a similar injury in the same position. Blood welled up from the wound, but did not flow out to the same extent as in the first case. Such injuries when made over the malleoli gave exit to no blood, even on pressing the parts. The differences in result depend obviously upon the amount of blood in the tissue selected.

"Microscopic examination of the post-mortem injury made in case 1: There is a zone of blood in the course of the incision, and blood has been displaced laterally between the bundles of fibrous tissue, in places for a considerable distance, as well as between the fat cells, the entire result being precisely like that in the moko.

"The microscopic examination of the New Zealander's wound shows quite clearly that it has been produced by a sharp chisel-like instrument, and not by a series of punctures. No artificial colouring matter was detectable either on the faces of the incision or between the divided bundles of fibre. There is no sign of any inflammation having taken place.

"The conclusions arrived at are: The absence of histological changes, whether of active inflammation or repair, in the section of the Maori skin shows that the moko must have been done either shortly before or after death. But against the first supposition is the wide extent of that part of the moko having the same naked eye characters as the piece selected for examination, and obviously done at one and the same time. It is too extensive to have been carried out at a single sitting, covering as it does the whole of the forehead and both the malar regions, and it may be safely concluded therefore that it was done after death."

Mr. Shattock's opinion may be confirmed by the probability that if the

moko had been done before death colouring matter would have been inserted as usual. That the operation was done soon after death is also probable, as at that period the skin would be easier to operate upon than later, when the head would have hardened under the process of preservation.

15. RENEWAL OF MOKO.

"Tatuing by the Maori is renewed occasionally, as the lines become fainter by time, to the latest period of his life. Tetoro, who returned to New Zealand in the *Dromedary*, was re-tattooed soon after his arrival."¹ Polack² also says: "After a series of years, some chiefs have had the courage and patience to be retouched and renovated." But as to D'Urville's statement³ that Cook mentions repeated tatunings, I have not been able to trace this remark in that discoverer's records.

16. THE OBJECT OF TATU AND MOKO.

Marsden,⁴ referring to an agreement regarding the alienation of some land at Ranghee Ho in February, 1815, says: "The chief has signed the grant in a manner extremely curious and perfectly original. He has displayed the ingenuity which is characteristic of his countrymen, in a minute and laborious copy of the tattooed lines upon his own face." The lines as illustrated by Marsden are very roughly drawn and resemble very closely the design of an amokoed face published by Shortland⁵ from Banks Peninsula in Middle Island, and the Maori witness has given a signature which appears to be part only of face tatu or moko. Scherzer was informed authoritatively⁶ "that on the occasion of the chiefs ratifying the treaty with the English they superscribed the various documents with the lines upon their faces, like so much heraldic blazonry, instead of writing their names." The custom first referred to by Marsden had apparently become popular, but there appears to be no reason for Polack's statement⁷ that "tattooing is the sign-manual and crest of a native chief. In title-deeds of land-purchases, or receipts of any description, the *moko* or fac-similes on the face of a chief are correctly represented by him on paper. The initials or crest on the seal attached to the watch or ring of a European is accounted by a native as the '*moko*' of its owner." In fact, Dieffenbach states plainly the "*moko* does not form what might be called the *arms* of an individual,"⁸ and adds that the affixing of their *moko* or some other figure as their signature by the natives seems a "modern invention"—which, of course, it must have been. "Slaves, if they have been taken when children, are not tattooed, nor is the operation completed in those cases where it has already been partly performed upon them."⁹ "Slaves are tattooed as well as the chiefs, but there are various forms which the former are not permitted to use."¹⁰ This fact

¹ Cruise, *op. cit.*, p. 264.

² *Op. cit.*, III, p. 450.

³ *Op. cit.*, p. 16.

⁴ *Op. cit.*, II, p. 48.

⁵ *Op. cit.*, II, p. 34.

¹⁰ Brown, *N.Z. and its Aborigines*, Lond., 1845, p. 31.

² *Op. cit.*, II, p. 45.

⁴ *Miss. Register*, 1816, p. 328.

⁵ *Novara*, Lond., 1863, III, p. 114.

⁸ *Op. cit.*, II, p. 34.

probably led Darwin to write when at Waimata that "as it is a badge of distinction between the chief and the slave, it will probably long be practised." D'Urville's information was to the effect that mokoing "is not allowed to the Kukies (slaves), to the general public, and even to those who dare not join in combats unless they are authorised to wear them on account of high birth. Tuai assured me that the general public acquire the right of *moko* by means of exploits of war, and after an honourable campaign, the chiefs generally added some new design in token thereof. He also told me that the same designs were gone over several times in the course of one's life, sometimes even four or five different occasions. He told me that Shongui had received all his *mokos*, as his face had been subjected to five tatuings. As for himself he had only got as far as his second tatuing, but he counted on obtaining his third on the return of an expedition which he was then meditating. Perhaps these honour degrees in *moko* are not so precise as Tuai wished me to believe, anyhow it is certain that the privileges of *moko* are limited to men of distinguished birth or to warriors celebrated for their grand deeds, and that a *rangatira* considers himself the more honoured the more his face is *mokoed*." To D'Urville, *moko* "seemed to be the exact equivalent to the armorial bearings of Europeans, with this difference, that the armorial bearings simply proved the individual merit of him who had first been able to obtain them without in any way proving any merit in his children, while the decoration of the New Zealanders proves in an authentic way that in order to have the right of wearing it he has had to show proof of extraordinary personal courage and patience. Nothing demonstrates better these ideas which the New Zealanders attach to their *moko* designs and their analogy with our armorial bearings than the following observations:—Tuai one day, with great pride, called my attention to some bizarre designs engraved on his forehead, and as I asked him what there was so remarkable about them, he replied: 'The Koro Koro family is the only one in New Zealand which has the right to wear these designs; Shongui, powerful as he is, could not take them, for the family of Koro Koro is much more illustrious than his.'¹ In fact, the strange decorations have the advantage of announcing at the outset and in an authentic manner the rank of every individual, and to assure him of the consideration to which he is entitled."² In his short reference to mokoing, Anderson³ says, "but it is doubtful if this be ornamental, or intended as a mark of particular distinction," and we are informed by Crozet that "the chiefs were very pleased to show us all the tatuings on their bodies, and several were proud and conceited about them."⁴ Savage at the time of his visit, found the men still proud of their marks. He says: "The pantaloons, particularly the posterior part, are in general very highly embroidered, and of which they are not a little vain."⁵ D'Urville⁶ found the natives of Cook's Straits as vain of their mokoing as those of the northern portion of *Ika na mau*. If a youth

¹ *Op. cit.*, pp. 451-3.

² *Cook, Third Voyage*, book I, chapter vii.

³ *Op. cit.*, p. 47.

² D'Urville, *ibid.*, p. 453.

⁴ *Op. cit.*, p. 39.

⁵ *Op. cit.*, p. 449.

twenty years of age be not mokoed "he is considered unmanly if he has not endured part of this painful process. . . . When Wheety, who was half anglicised by a long residence amongst us, was told that he ought not to adopt this frightful custom of his countrymen, he said if he did not he should be despised, and perhaps taken for a woman."¹ Similarly "Tooi informed us [Marsden] that Korrokorro wished him to be tattooed. We told him that it was a very foolish and ridiculous custom; and, as he had seen so much of civilised life, he should now lay aside the barbarous customs of his country, and adopt those of civilised nations. Tooi replied that he wished to do so himself; but his brother urged him to be tattooed, as otherwise he could not support his rank and character as a gentleman among his countrymen, and they would consider him timid and effeminate."² Although Dieffenbach³ tells us that "*moko* is not an enforced ceremony, but any one may have it done, or not, according to his wishes," we have Taylor's statement⁴ that a "*papatea* or plain face was a term of reproach," thereby supporting Marsden. According to Yate "the tattoo is not a special mark of chieftainship, as has been stated by almost all [*sic*] writers on New Zealand; for many chiefs, of the first rank, are without a single line; others, even to old age, are only partially covered; and many a slave has had the greatest pains taken, to give this ornamental operation the greatest effect upon his plebeian face. Nor do the peculiar marks on the faces of different people denote their rank, or the tribe to which they belong; it all depends upon the taste of the artist, or upon the direction of the person operated upon."⁵ "Each man thinks himself, and is thought by others, to be more brave if he submits boldly and unflinchingly to the taps of the tattooing instrument; and not a few imagine that it adds to their beauty, and submit to it that they may be followed and admired by the women."⁶ "Persons at all ages and of all ranks who possess means or influence to obtain it, get tattooed, chiefs, freedmen, hereditary bondsmen, and slaves. Though often a distinctive insignia for a tribe, yet it is no sign of rank, as warriors are captured at all ages, marked or otherwise."⁷ "The *moko* is neither intended to constitute a distinctive mark between different tribes, nor to denote rank, as has been variously stated. It is, in fact, only a mark of manhood, and a fashionable mode of adornment, by which the young men seek to gain the good graces of the young women. It only so far denotes rank, that the poor may not have the means of paying the artist, whose skill is necessary."⁸ "To have fine tattooed faces was the great ambition of young men, both to render themselves attractive to the ladies and conspicuous in war; for even if killed by the enemy, whilst the heads of the untattooed were treated with indignity, and kicked on one side, those which were conspicuous by their beautiful *moko* were carefully cut off, stuck on the *iuruturu*, a pole with a cross on it, and then preserved; all which was highly

¹ Cruise, *op. cit.*, p. 264.² *Op. cit.*, 1822, p. 252.³ *Op. cit.*, II, p. 34.⁴ *Op. cit.*, p. 150.⁵ *Op. cit.*, p. 148.⁶ *Ibid.*, p. 149.⁷ Polack, *op. cit.*, II, p. 47.⁸ Shortland, *op. cit.*, pp. 16-17

gratifying to the survivors and the spirits of their late possessors."¹ In the early days Marsden wrote²: "In time of war, great honour is paid to the head of a warrior, when killed in battle, if he is properly tattooed."

17. VARIETY IN FACE DESIGN.

As we have seen above, Banks remarked on the fact that no two individuals had the same *moko*. Shortland in describing some scrolls, one of which occasionally replaces another, continues: "This is the only notable variation I have ever seen, and this is merely a matter of taste. As a general rule, two fully marked faces selected at hazard from distant parts of the country would, on comparison, manifest merely some slight dissimilarities, attributable to the difference of skill or taste of the artists who had executed the work."³ It must be remembered, however, that the greater part of Shortland's experience was limited to a small portion of the southern districts. Brown⁴ differs from the above opinions with regard to the *moko* not being distinctive of a tribe or individual, and in speaking of the great sameness exhibited by the lines continues: "Notwithstanding that they are positively different in each individual, being varied to suit the peculiar formation of his countenance. *Tattooing* appears almost reduced to a system, as each tribe possesses some peculiarity in the form of the *tatoo*; so much so, that, by its means, members of one tribe at once recognise that to which a stranger belongs." Similarly Yate⁵: "With respect to all fully-marked faces, there is in the marks a great similarity; and it requires a person to observe them very minutely to detect the difference." This is in accordance with Polack, who says the stains and incisions are so far from being confined to one fashion or pattern, that tribes are known by such distinctive marks, and many chiefs whose countenances have never been seen by a distant tribe are known simply by the distinguishing mark which has been peculiarly engraved on their countenances."⁶ Joest, when considering the circumstance that *tatu* (? *moko*) served wherewith to recognise individuals, says such fact "proves most conclusively that every man bore on his face his specific mark."⁷ Robley likewise says: "No two Maories were alike in their markings."⁸ The foundation patterns appear to be seven in number, so that with allowance for individual taste and artist's fancy it is quite possible the adult males of a population numbering, at the first arrival of the Europeans according to Réclus, one hundred thousand, can have found sufficient variety to give every one a design sufficiently differentiated to be quickly and appreciably noticed. To obtain a fairly conclusive answer to the question as to whether there was this variety a comparison might be made of the designs on every head, of which there must be a few hundreds in our museums.

¹ Taylor, *op. cit.*, p. 152.

² *Op. cit.*, p. 18.

³ *Op. cit.*, p. 151.

⁴ *Op. cit.*, p. 29.

⁵ *Op. cit.*, 1822, p. 252.

⁶ *Op. cit.*, p. 30.

⁷ *Op. cit.*, ii, p. 42.

⁸ *Op. cit.*, p. 91.

18. THE ORIGIN OF TATU AND MOKO.

As regards the origin of *moko*, Taylor¹ tells us: "Before they went to fight, the youths were accustomed to mark their countenance with charcoal in different lines, and their traditions state that this was the beginning of the tattoo, for their wars became so continuous that to save the trouble of thus continually painting the face, they made the lines permanent by the *moko*;" but in the second edition of his book, published in 1870,² he adds: "It is, however, a question whether it did not arise from a different cause; formerly the grand mass of men who went to fight were the black slaves, and when they fought side by side with their lighter-coloured masters, the latter on those occasions used charcoal to make it appear they were all one," an explanation difficult to accept. All the same, Taylor³ was told in 1840 by an old native that originally his people were not warlike, that charcoal was used to mark the faces, and that *mokoing* was a late invention.

19. THE PAPUAN ELEMENT IN NEW ZEALAND.

We must now make a slight discursion and examine into the question of a pre-Maori black population in New Zealand.

Crozet, writing in 1770, expresses his astonishment at seeing three varieties of men in the Bay of Islands, one with yellowish white, with black hair, another more swarthy, not so tall, with hair slightly frizzled [*? curled*], and a third kind the men of whom consisted of "true negroes with woolly heads, and shorter than the other two." He speaks of all three kinds being handsome and well formed men.⁴ I cannot find that either Cook or Banks refer to this black people, but Banks⁵ says: "A few [natives] had on their faces or arms regular scars, as if made with a sharp instrument, such as I have seen on the faces of negroes." These may be merely the marks left by the *tangi*, or they may have been those we now call *keloids*, which the negroid races are so fond of marking on their bodies, and which are widespread amongst the Melanesians. If, however, either Banks or Cook had seen these true negroes they would probably have recorded the fact. D'Urville⁶ describes in fairly conclusive terms the peculiarities of two varieties of people in New Zealand, one variety of which, according to these descriptions, was decidedly negroid. It must, however, be remembered that D'Urville kept no proper journal and his accounts were almost wholly written from memory, which detracts from the value of his statements. Lieutenant Charles Hamilton Smith⁷ supports the opinion of the existence of Papuan and Polynesian races in New Zealand on linguistic and legendary evidence neither of which as given by him can be considered by themselves very satisfactory. He refers on p. 460 to Plate XX in his book, one

¹ *Op. cit.*, p. 151.² *Ibid.*, p. 320.³ *Op. cit.*, p. 194.⁴ *Op. cit.*, p. 28.⁵ *Op. cit.*, p. 186.⁶ *Op. cit.*, II, p. 387.⁷ *Nat. Hist. of the Human Species*, Edin., 1848, p. 231.

figure on which he describes as a Polynesian Maori and the other a Papuan Maori, and adds: "The two figures confirm that two distinct races existed there anterior to the European discovery." But in both figures the hair is shown curly although the physiognomies are quite distinct; however, neither of the portraits can be considered sufficiently accurate in order to base an opinion thereon. Dieffenbach¹ enters fairly fully into the characteristics of alleged two distinct peoples and adds that the black race, "which is mixed in insensible gradations with the former, is far less numerous, and does not predominate in any one part of the island, nor does it occupy any particular station in a tribe, and there is no difference made between the two races amongst themselves, but I must observe that I never met any man of consequence belonging to this race, and that, although free men, they occupied the lower grades." He further gives it as his opinion that it is very doubtful whether those differences which we observe amongst the natives of New Zealand are due to the previous existence in the country of a darker race afterwards conquered and nearly exterminated by the arriving Polynesians. He remarks on the absence of any trace of blending in the language and no trace of it "in the traditions, which certainly would have mentioned the conquest of one race by the other if it had really happened." Finally, as regards Crozet's discovery of the darker race at North Cape, he could on visiting the place seventy years later find no trace of such blacks there, and adds: "Nor are these darker-coloured individuals more common in the interior; I should say even less so." Polack² draws a clear distinction between the two peoples: "The nation consists of two aboriginal and distinct races. . . . The first may be known by a dark brown complexion, well formed and prominent features, erect muscular proportions, and lank hair, with a boldness in the gait of a warrior, wholly different from that of the second and inferior race, who have a dark complexion, brown-black hair, hair inclining to the wool like the Eastern African, stature short, and skin exceedingly soft. In physical character the two castes differ in a great degree." Taylor³ tells us: "The remains of this race [the Melanesian] are to be seen in every part of New Zealand, especially among the Nga-ti-ka-hunu, to which the derisive name of Pokerekahu—Black Kumaru—is applied." Quatrefages and Hamy⁴ call attention to the fact that although many travellers speak of the existence of blacks among the Maories their interpretations of their observations are extremely varied, nor are they based on anatomical investigations. They say Dieffenbach's description of a male skull tallies exactly with that of a Papuan.⁵ They also maintain that a New Zealand skull presented by Arnoux in 1847 to the Mus. Nat. Hist., Paris, as a good type of the skull of the New Zealand black race, has decided Papuan characteristics. They assert that the skull described by Huxley⁶ cannot be distinguished from those from Melanesia, and especially from those from the New Hebrides. They say the Paris Museum contains two prepared heads brought home by Freycinet and Lesson,

¹ *Op. cit.*, pp. 7-11.

² *Op. cit.*, 2nd edition, p. 13.

³ *Op. cit.*, II, p. 7.

⁴ *Op. cit.*, I, p. 6.

⁵ *Crania Ethnica*, 1882, p. 293.

⁶ *Journ. Anat. and Phys.*, I, 1867, pp. 60-77.

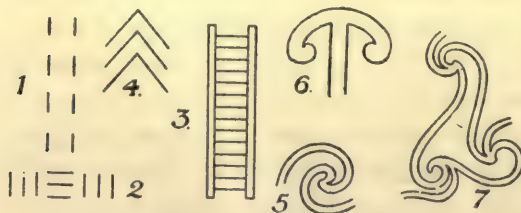
the woolly hair on which completely recalls that of pure Melanesians. They assert that the Museum recently received a large collection of skulls from New Zealand, amongst which it was not difficult to find several which showed a certain number of changes of type in a Melanesian direction. They are evidently convinced there was a pre-Polynesian black population in New Zealand, and that there was at one time a black element in New Zealand. But they omit to mention that Huxley in describing the skull referred to expressed considerable doubt as to its New Zealand origin, while Carter Blake considered it came from New Caledonia.¹ If it did come from New Zealand it would only support the contention that Melanesians formed part of the aboriginal population, to the limited degree of one specimen. In the map to his paper on "The Distribution of the Principal Modifications of Mankind" Huxley gives the New Zealand islands one colour, thereby indicating a pure and not a mixed race.² This is perhaps due to the fact later on mentioned by Flower³ that though the Melanesian element in its wider sense is present in New Zealand "it is completely overlaid by the Polynesian." Quatrefages and Hamy also call in the aid of Hochstetter, Cook at Cape Brett, Nicholas, and Earle, but in none of these authors can I find any confirmation. Hochstetter⁴ says nothing about the presence of Melanesians in New Zealand; Cook does not refer to the question at all either at Cape Brett or elsewhere; Nicholas⁵ merely mixes up Polynesians and Fijians; while Earle indulges in some unimportant comparisons. Hursthouse's *New Zealand*, also referred to by Quatrefages and Hamy, I have not seen. Sir W. Turner, writing two years after Quatrefages and Hamy, points out that in the crania of the Maori there is a tendency "to assume dolichocephalic proportions and thus to depart from a pure Polynesian type, much more strongly than is the case with the Samoans, the Marquesas Islanders, or even the Sandwich Islanders,⁶ and he comes to the conclusion that New Zealand had been occupied by a dolichocephalic and probably a Melanesian race, before the Polynesian element was introduced to it."⁷ This priority of local existence he extends to other islands, for he adds,⁸ he is led to "a conclusion similar to that arrived at by W. L. Ranken from a consideration of other data, viz., that the South Sea Islands had been inhabited by Papuans prior to the Mahori colonisation." Sir W. Turner is, however, apparently not quite satisfied on account of other ethnological data as to whether the two races, Melanesians and Polynesians, were the "only races which have ever occupied these islands."⁹ In opposition to these views we find Hale writing in 1846¹⁰: "Some voyagers have believed that they saw in the natives of New Zealand at least two distinct races of men, of which one approached the yellow Polynesian and the other the black Papuan family

¹ *Anth. Rev.*, IV, p. 407² *Journ. Ethn. Soc.*, N.S. II.³ *Journ. Anth. Inst.*, XIV, p. 384.⁴ *New Zealand*, English edition, Stuttgart, 1867.⁵ *Narrative*, II, p. 267.⁶ "*Challenger*" Reports, Part XXIX, "Human Crania," p. 108.⁷ *Ibid.*, p. 109.⁸ *Ibid.*, p. 110.⁹ *Ibid.*, p. 113.¹⁰ *Op. cit.*, p. 11.

The latter, they say, are distinguished by their shorter stature; darker complexion, and frizzled hair. Our observations did not confirm the correctness of these statements. It appeared to us that the physical differences were no greater than are seen in every country between different classes of people—between the well-fed, luxurious idler, and the half-starved, ill-clad labouring man. We saw many stunted forms and dark complexions among them, but no instance of what could properly be termed frizzled or woolly hair.” Deniker¹ ignores the question altogether. To obtain linguistic evidence as to whether there existed or did not exist any Melanesian or Papuan element in the Maori dialects I applied to Mr. Sydney H. Ray, who kindly replied as follows:—“The Maori and other Polynesian languages seem to be the modern representatives of an ancient language which was cognate to certain Melanesian languages, but not to all. The present Melanesian languages most closely related to Polynesian are those of the South Solomon Islands (perhaps also New Guinea), Fiji, Banks Islands, and North New Hebrides. In parts of the Polynesian region, especially in Paumotu and Tahiti, and to a less extent in Rarotonga and New Zealand, there are traces of an older stock, of which words only have survived without appreciably affecting the grammar. This strange element is not Melanesian (for Polynesian and Melanesian vocabulary and grammar are mainly the same but are distinct). For want of a better name it may be called Papuan.” This opinion places the Maories on the same footing as other Polynesians, and practically supports the theory of some pre-Polynesian race or races. The evidence of European eye-witnesses is, as we have seen, meagre and vague, and hence of itself not of sufficient value as a factor of determination, but added to the cranial and linguistic evidence, the three together must be accepted as proving a Melanesian element to have once existed in New Zealand.

20. THE PATTERNS AND THEIR ORIGIN.

There appear to be seven patterns made use of by the Maories in their *tatu* and *moko* :—



1. The line of dots or strokes.
2. The mat- or plait-work pattern.
3. The ladder pattern.
4. The chevron.
5. The circinate coil.
6. The anchor.
7. The trilateral scroll.

The *first* pattern is shown by S. Parkinson and consists of consecutive short vertical lines dropping down over or following the contour of the forehead or of dotted lines following somewhat the contour of the face (Fig. 19).

¹ *The Races of Man*, London, 1890.

The *second* pattern is shown by Tregear¹ in a sketch of a *tatued* native whose face, but for a solitary letter-S-shaped line (Fig. 20), is covered with parallel lines in groups of three, each set more or less alternately in such a way that if extended to their full they would make the common basket-, mat-work, or plait pattern. Of this he says: "In New Zealand the curves of the modern tattooing (the tattooing of Mataora) are said by Mr. White (whose knowledge of the Maori is very great), to have superseded a different fashion for marking called *mokokuri*. From the description given to Mr. White by the old priests I drew the picture forming the frontispiece of his new work *The Ancient History of the Maori*. It can be seen by this that a peculiar system of marking existed: horizontal and vertical lines arranged in sets of threes." Scherzer, who must have obtained his information from White or some old resident, for he did not stay long enough in the islands to investigate for himself, unfortunately turns this statement² into one that this early stage had only been reached when Cook visited the islands, which, with Cook's, Banks's, and Parkinson's descriptions before us, we know



FIG. 20.—Tatu marks according to White as depicted by Tregear (*New Zeal. Inst.*, XX), to show No. 2, or plait-work pattern.



FIG. 19.—Portrait taken at Poverty Bay (Gisburne) by S. Parkinson, showing No. 1 pattern on forehead and cheeks and under eyes; No. 3, or ladder, pattern across nose; and No. 5, or simple circinate coil, on cheeks, nose, etc.



FIG. 22.—Portrait taken at Cape Brett, Bay of Islands, by S. Parkinson, showing No. 1 pattern on forehead; No. 3, or ladder, pattern; and No. 7, or trilateral scroll, pattern on nose and cheek.

¹ *Trans. New Zealand Inst.*, XX.

² *Op. cit.*, III, p. 110.



FIG. 21.—Wooden effigy in Brit. Mus. 15½ inches (0.394 m.) high, showing No. 2 pattern on chest, No. 5 simple circinate coil on face and return circinate coil on face and abdomen, also line pattern based on this coil; No. 6, or anchor pattern; and No. 7, or trilateral scroll pattern on thighs, etc.

the natives of Hawai and those of New Zealand, and to a far greater extent than that common tie which unites all Polynesians." Büchner, too, found great similarity between the Maories and Hawaiians. *Reise d. d. stillen Ocean*, Munich, 1878, p. 326.

² *Op. cit.*, Plate XXI.

must be incorrect. A small wooden effigy in the British Museum has similar lines, but in sets of two, arranged in the same way (Fig. 21). This form reminds us of the mat-work carved patterns so common in Polynesia, and especially of the *tatu* in Hawai¹ as depicted by Choris as late as 1822.

The *third* or ladder pattern is shown in Sydney Parkinson's portrait of a chief² (Fig. 22) taken at Cape Brett, Bay of Islands, on Cook's first voyage, and makes as it were a background to the curious trilateral scrolls. Choris shows this ladder-like form in *tatu* marks in the Sandwich Islands, and it is found as decoration on utensils in Fiji, Tonga, and elsewhere. It may have resulted as an elongation of the lines of the first pattern. D'Urville shows the thigh *tatuing* of a Maori man in which the rungs have disappeared so that only parallel lines remain, and Robley³ shows the ladder pattern with the rungs close together.

The *fourth* pattern is the chevron, not very common (Fig. 23). Robley shows it on *tatued* lips,⁴ and it is to be seen on the left cheek of a well preserved *moko* head in the Bankfield Museum, under my care in Halifax.

¹ "Artificial Skin Marking in the Sandwich Islands," by H. Ling Roth. *Internationales Archiv für Ethnographie*, Leiden, 1900, p. 198 *et seq.* In connection with this coincidence I may mention Frank's opinion, referred to by Moseley, that "as far as regards the special development of art, and forms of implements of use amongst the New Zealanders, that people are nearly allied to the Hawaiians, certainly more nearly so than to the Samoans, from colonists of which race Hall supposed that the Maories were sprung. The stone adzes of the New Zealanders are of the same form as those of the Hawaiians, and both differ for example from those of Tahiti. *Naturalist on the Challenger*, London, 1879, p. 510." Dieffenbach (II, p. 91) seems to have held a similar opinion in regard to language, custom, and relationship. He says: "There is such affinity between the dialects of

Op. cit., p. 20.

⁴ *Ibid.*, p. 74.

This pattern may possibly have originated amongst the Maories as follows:—The spaces under the tails of the coil are filled in with slant parallel lines, generally concave towards the coil, and diminishing in length; when two such coils are placed back to back, without a dividing line, we have as a result a series of V's fitting into one another, and these when extended would give the chevron.

The *fifth* pattern.—With the introduction of this, the circinate coil, as shown by Parkinson in the portrait of a chief¹ taken at Poverty Bay (Gisborne), appears to have come an adaptation of the *moko* lines to the contour of the face, somewhat similar to the lines adopted in the first pattern. For instance, wavy lines start from the centre of the forehead following the shape to the head, a series of lines curl round from the nostrils to the chin, which lines are made to pass round the mouth in a more or less parallel form. At least so far as my investigations have carried me I have not seen any *moko* faces with the coil and at the same time without these



FIG. 23.—Moko on face of Tangieri, a chief of Maungakaia. After Polack. To show possible origin of Maori chevrons.

lines. Not infrequently the large coils are supplied with spokes, perhaps due to the mere desire to fill in space, or they may have originated as follows:—On plank end and canoe heads it has not been possible to carve the coils without supports (Fig. 24) or spokes, and from this design the spokes may have been copied



FIG. 24.—Carved wooden panel from a house in Rotorua, Brit. Mus., 78½ in. × 15 in. (1.994 m. × 0.381 m.). To show return circinate coil with spokes adapted from moko pattern.

back on to the *moko* pattern. Herbert Williams² tells us: "The circinate fern fronds or *pitan* are acknowledged in the beautiful carved scrolls on *rapa* (head) of the war canoe."³

The *sixth* or "anchor" pattern, from its resemblance to an anchor, owes its name to Schurtz, who says of it⁴: "There can be no doubt as to its *motif*: it is

¹ *Op. cit.*, Plate XVI.

² Hamilton, *Maori Art*, Wellington, p. 118.

³ Tregear states very rashly (*Journ. Anthropol. Inst.*, XIX, p. 101), "I believe that I can prove etymologically that the curves of Maori tattooing are snake coils, which they must have learnt far away from Polynesia." Later on (*Trans. N.Z. Inst.*, 1890, XXXII), having forgotten this statement, he endeavours to prove that the spiral or coil was intimately connected with Maori sun worship.

Globus LXXVII 27 Jan. 1900, p. 53.



FIG. 27.



FIG. 28.



FIG. 29.

Effigies after Angas. Figs. 27 and 28, Plate XXV, Maketu House, Otawhao Pah; Fig. 29, Plate XXXVIII, House at Raroera Pah. To show obliteration of nose and prominence of tongue, from which anchor pattern could *not* have been developed.



FIG. 30.



FIG. 31.

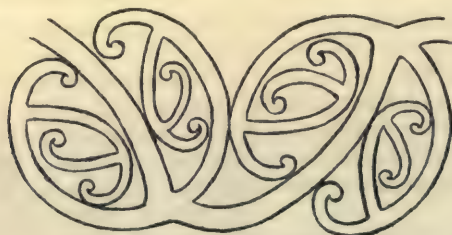


FIG. 32.

Patterns on Maori house rafters. After Herbert Williams in Hamilton's *Maori Art*, Part II, Coloured Plates, Nos. 18, 26, and 5. To show partial later development of anchor pattern according to Williams (p. 118).

nothing else than a crude drawing of a face with nose, mouth, and outline of the cheeks," etc. (Figs. 25, 26). In its double form (Fig. 25) it may suggest a

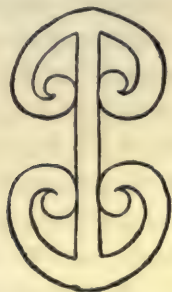


FIG. 25.—Design on the end of a storehouse at Papaitonga. After Hamilton (*Maori Art*, Part II, Plate XV), to show No. 6 or anchor pattern.




FIG. 26.—Pattern on Motu Motu Toarifi (New Guinea) shield, Brit. Mus. To show concentric lines round human mouth for comparison with Fig. 25.

human face, all the more so when compared with a conventionalised face from New Guinea (Fig. 26). But I doubt whether the pattern be what Schurtz



FIG. 33.—Pattern on Maori Buliroarer, Brit. Mus. To show probable connection between anchor and trilateral scroll patterns.

appears to maintain, that is, a conventionalised *Maori* face, because wherever we see a carved Maori face in course of devolution the tendency is for the tongue to hang below the mouth, so that the characteristic feature is no longer the nose; hence, instead of the anchor pattern, we should have a pattern like this . The accompanying illustrations from Angas show this (Figs. 27–29). The anchor may however be and probably is a survival of the face of pre-Maori Melanesians of New Zealand. Herbert Williams,¹ who has studied the scroll patterns, of which this forms one, on the spot and with native assistance, tells us the midribs are a "modern invention" (Figs. 30–32), and he points out² how the sweep of the outer curve of the scroll got broken. But this requires further proof.

The *seventh* or trilateral scroll, which is apparently not as rare as the chevrons, is made up of return curves. These return curves are by Williams³ considered to owe their origin to the flower of the *Clanthus puniceus* (Fig. 33).

The interest in Maori art as distinguished from that of the rest of Polynesia lies in the preponderance of curves and especially of spirals, the latter of which are almost entirely wanting among Polynesians outside New Zealand.

The Marquesans, who carried *tatu*ing to its extreme and considerably surpassed the Maories, had a design on the back of the hand which may possibly be a

¹ *Op. cit.*, p. 119.

² *Ibid.*, p. 118.

³ *Ibid.*, p. 118.

spiral, while a not uncommon design on their incised work is a small and double spiral.¹ On the other hand, the Papuan branch of the Melanesians, if we are to distinguish between them, revel in the spiral in its various developments. The indications would therefore be that there has been some considerable contact between the Papuans and the Maories. This view appears to be strengthened by the strong resemblance between some of the Maori and New Guinea scrolls. For instance, if we compare the excised portion of Haddon's illustration of the decoration of a Maori nose flute with the decoration of the coco-nut from Dutch New Guinea we find a very close resemblance. Looking at the joined coils (Figs. 34 and 35) A B, we find in both cases A has an arm running out in the direction C, the filling-in being likewise similar in both cases. These resemblances *may*



FIG. 34.



FIG. 35.

FIG. 34.—Portion of the decoration on a Maori flute. After Haddon (*Evolution in Art*, p. 72).

FIG. 35.—Decoration on a coconut from Dutch New Guinea. After Preuss (*Internationales Archiv für Ethnographie*, Leiden, XII, p. 178). To show resemblance between the two decorations.

possibly be coincidences due to the extreme variability to which the scroll or connected coil lends itself, but I doubt it. Haddon remarks that these resemblances² are more or less superficial, that there is more interlocking in the Papuan than in the Maori patterns, the bird element is entirely wanting, etc., etc. Schurtz,³ in discussing Maori carving, considers that in the spiral *tatu* (*moko*) and carving "we have to deal with a new fashion, which has so much in common with Melanesian art that it can hardly pass as independent origin (*Erfindung*); perhaps it belongs to the Melanesian element in the Maori population and had by chance after long neglect become

fashionable again." This is not at all improbable: Pitt-Rivers has shown an example of revival in ornamentation on Solomon Island spears.⁴ Mention has been made above of a wavy line or a letter-S-shaped figure on a face covered with an early form of *tatu*. Robley gives a drawing (Fig. 20) of this face reproduced from White's *Ancient History of the Maori*,⁵ but in the text his engraver has mutated the form of the letter S into that of the Greek *sigma*. This letter S is mentioned by Crozet in 1772⁶: "They have also on both hands two little black engravings drawn very correctly in the form of an S." Polack

¹ An illustration in *U.S. National Museum Report*, 1888-9 (Plate LII), of an Easter Island paddle in the National Museum, Smithsonian Institution, appears to be ornamented with spirals, but a close examination shows this not to be the case.

² *Evolution in Art*, London, 1895, p. 72.

Nature, 1881, XXIV, p. 238.

Op. cit., p. 39.

³ *Op. cit.*, p. 53.

Vol. i, frontispiece.

gives an illustration of a hand with a curious design which may have developed from the S form (Fig. 38). That a wavy or S line could have developed into trilateral spirals or coils has been shown by Flinders Petrie to have been the case with some ornamentation on scarabs¹ (Figs. 36 and 37). There is no reason why the almost infinite variety of spirals and scrolls as depicted in Maori art could not have had an independent origin, the circinate coil being the basis, with a natural *motif* in the bracken, as mentioned by Williams and already referred to. If a topographical survey of the distribution of ornament in New Zealand could be made it would probably throw considerable light on the origin and development of the patterns under discussion, for the records of Cook and Banks show that in different localities different patterns prevailed. If we were shown that in localities where the Melanesian element existed the spiral was originally more prominent either as moko or other decorative design than elsewhere we could fairly conclude that the spiral in New Zealand was of pre-Polynesian or of Melanesian origin. But so far as I can find while spirals were met with by Europeans in the early times in the moko at Bay of Islands and Poverty Bay in the North Island and on Banks Peninsula in Middle Island, there is as yet nothing to show that the Maories in these parts were more or less pure Polynesians than elsewhere, although Sir W. Turner found that the cephalic index varied occasionally in the same tribe.

I am inclined to adopt a non-local origin for the spiral patterns for which there appears to be also possible support in the fact that the Maories who have a comparatively large amount of Melanesian mixture make use of the spiral to an unlimited extent while the Marquesans, who have less of this mixture, show very little of the spiral. The Sandwich Islanders with about an equal amount of mixture appear to be without any spiral at all in their decorative art, and a branch of the Melanesians, *i.e.*, the Fijians, appear to be equally wanting in the spiral. But as the decorative arts of both Fijians and Hawaiians are in about an equally low stage, they can be left out of consideration.

In a question of this sort we are bound to consider the race elements, and the Melanesian



FIG. 38.—Tatu mark on back of hand of Maori chief Tamaroa, whose face bears the usual coil and other moko patterns. After Polack (I p. 67).



FIG. 36. FIG. 37.
FIGS. 36 and 37.—Patterns on scarabs developed from a wavy line. After Flinders Petrie (*Egyptian Decorative Art*, Lond., 1895, pp. 26, 27).



FIG. 39.



FIG. 40.

FIG. 39.—Scroll pattern on Danish bronze celt from *Mem. d. Antiquaires du Nord*, 1887, p. 258, quoted by G. Coffey (*Jour. Roy. Soc. Ant.*, Ireland, 1896). FIG. 40.—Scroll pattern on Stele from *Grav. V. Mycene*, after Schliemann, quoted by Coffey, *ibid.* To show existence of trilateral scroll and anchor pattern in countries with improbable connection with New Zealand.

¹ *Egyptian Decorative Art*, London, 1895, pp. 17 *et seq.*

element (though hidden) is probably not so far distant that it has no influence on the decorative art, and if this view is correct we may all the more reasonably arrive at the conclusion that the spiral pattern in Maori tatu and moko was of Melanesian origin.

In his tentative thought that the style of carving was altered to suit the new *tatu* (*moko*) patterns, Schurtz comes to the same conclusion as Haddon, who records his impression¹ "that the carved designs have been mainly derived from tattooing," etc. Both Haddon and Schurtz, therefore, would not agree with Joest² that the *tatu* patterns of a people always correspond to those on the utensils in daily use, for in the case of the Maories it is the carvings which correspond to the *tatu* marks.

21. COMPARISON WITH OTHER PEOPLES.

Ratzel,³ in speaking of African *tatus* (really *keloids*, as his text shows), says: "But the *tatuing* of the Tushilange has been compared with that of the New Zealanders; it is certainly the most complete of all African *tatus*. Even Virchow has compared the patterns (*Linienführung*) with that of the Maories." As Ratzel gives no reference for this statement, it is impossible to verify it, but in all probability Virchow's reference is merely to some superficial resemblance between



FIG. 41.



FIG. 42.

Faces of Ba-shilange with keloid patterns on face. After Büchner quoted by Frobenius. To show *superficial* resemblances with Maori moko pattern.

the two. Frobenius⁴ gives two portraits of Bashilange whose *tatus* (? *keloids*) he compares with those of the New Zealanders. I cannot trace any such marks on Maori faces, but there are somewhat similar patterns on the carved feather-box (Fig. 43). The curved lines on the lower cheek (Fig. 42), from the upper lip to

¹ *Op. cit.*, p. 72.

² *Op. cit.*, pp. 23 and 121.

³ *Völkerkunde*, second edition, Leipzig, 1895, II, p. 79.

⁴ *Ursprung der Kultur*, Berlin, 1898, p. 338.



FIG. 43. Carved Maori box. Brit. Mus. To show *superficial* resemblances with Bashilange keloid patterns.

the chin and back to nose, are quite different from the similarly placed lines on the Maori, and the conventional exaggerated snake form (Fig. 41) is not found in the Maori.¹ The range and developments of the coil are infinite; we find them in the decorative art of the Celts, Saxons, Egyptians, Americans, etc., but superficial resemblances of this sort can have no ethnographical meaning. If individual lines such as those round the mouth are to be of any value for determination of affinity, then we must find relationship between some of the Naga hill tribes (Fig. 44) and the West Africans and Maories. Such comparisons are not reasonable. In their straight line stages Maori *moko* and *tatu* had probably close connection with other Polynesian designs, and possibly closest with those of Hawaii, but through the adoption of the Melanesian circinate coil, they obtained a series of designs quite different from that of any other people. On the other hand, the operation of *moko*, as opposed to that of *tatu*, has its counterpart in other countries.



FIG. 44.—Tatued face of a Vengam of Senua, Naga Hills. After Woodthorpe (*Journ. Anth. Inst.*, XI). To show *tatu* lines following contour of the features.

DISCUSSION.

Mr. READ observed that the most important point to determine was the original purpose of the practice of *moko*. He thought that the reasons adduced by Mr. Ling Roth and by others were scarcely adequate. There was an intimate connection between the painting of the face or body and the habit of tattooing, and in his judgment a strong motive was required before a man would undergo such a painful operation. Painting was a simple process, and could readily be done for a special occasion. The virtue of *moko* was its permanent character.

Mr. EDGE-PARTINGTON said that in his opinion the tattooing implements shown on the screen were with the exception of the one at the extreme top from either Tahiti or Tonga; he differed from the opinion expressed by Mr. Ling Roth

¹ Bateman gives a portrait of a woman of the same tribe, with scroll pattern *tatus* (? *keloids*), which is very different from any Maori pattern. *First Ascent of the Kasai*, London, 1889, p. 20.

that the variations in the designs on the tattooed head were simply due to the fancy of the artist, and pointed out that Maori carvers in wood were subjected to severe penalties if they deviated in the slightest degree from the traditional pattern. He agreed with the view of Taylor (*N.Z. and its Inhabitants*, 1855, p. 151), namely, that the tattooing of the face originated from the old custom so common all over the Pacific of painting the face before going into battle.

The PRESIDENT gave a demonstration illustrated by lantern slides on the scroll patterns of the Massim District of British New Guinea (*i.e.*, Lousiades, d'Entrecasteaux Group, etc.), and showed that they were derived from the frigate-bird motive. The Maori spiral differs in character from that of British New Guinea, and there is no evidence that it is derived from the head of the frigate-bird. Several years ago he had published the opinion that the Maori spiral was derived from linear tattooing following the contours of certain parts of the body, such as the cheeks, the *alæ nasi*, and the buttocks. The carvings recently published by Mr. Edge-Partington (*Journ. Anth. Inst.*, xxx, *Miscel.*, Nos. 40, 41, Plate E) had caused him somewhat to modify this opinion (*Man*, May, 1901, No. 55), although he still believed that the influence of body contours was potent in retaining and emphasising the scroll designs even if it was not actually responsible for their origin. He also alluded to a considerable amount of evidence there was for the view that a large portion of Oceania was inhabited by Melanesians before the Polynesian migrations, and that some of the anomalies to be met with among populations supposed to be of pure Polynesian origin could be accounted for on this hypothesis. Volz even believes that in Melanesia and New Zealand there was an Australoid population prior to the expansion of the Melanesians.

Explanation of Shortland's Nomenclature to Fig. 13, Page 38. By SIDNEY H. RAY.

1. *Tiwhana* = to be curved like a bow, *whana* = to recoil (Samoan, *fana* = shoot with a bow).
2. *Repha* = (?) *repa* = belly of a shark (in Hawaiian, *repa* = border, fringe or hem of a garment).
3. *Ngu* = cuttle fish.
4. *Pongianguia* = *pongi* = nostrils, *angi* = to blow gently (in Samoan, *pongar-isu* = nostrils, *i.e.*, *pogai* = stump, *isu* = nose).
5. *Wakatara* = (?) *waka* = canoe, *tatara* = untied, loose.
6. *Kumikumi* = beard under chin. Samoan, *umi* = to lengthen out, *umi* = long.
7. *Rerepehi* = (?) *rere* = a waterfall, running of water, to flee, sail, or leap, etc., *pehi* = to weigh down, press, lie down. Tahiti and Hawaiian, to throw stones, etc. = *pei*.
8. *Wero* = to stab, *cf.* Samoan, *velo* = the horns of a cray-fish, also to cast a spear, etc.
9. *Pukaru* = (*pu* probably = spot or mark, knob), *pukoro* = surround with halo, *karu* = head or eye, *koro* = noose.
10. *Koroaha* = *koro* = noose.
11. *Paepae* = may be from *pae* = horizon, *paepae* = threshold. In other Polynesian languages, *e.g.*, Tahiti, *paepae* = a pavement of stones, Hawaiian, *pai* = to stamp or print pattern on cloth.
12. *Putaringa* = *cf.* *pukaru* = above, *taringa* = ear.
13. *Kauwae* = chin.
14. *Titi* = a peg, pin or nail, bird.

THE YAKUTS.

ABRIDGED FROM THE RUSSIAN OF SIEROSHEVSKI,¹ BY W. G. SUMNER, Professor of Political and Social Science in Yale University, New Haven, Conn., U.S.A., and revised and completed by M. Sieroshevski.

I.—SOCIETAL AND INDUSTRIAL ORGANISATION.

THE Yakuts inhabit a territory in North-east Siberia which is roughly 1,300,000 square miles in area, equal to about two-fifths of the area of the United States without Alaska. It all lies north of the parallel of 60 and is colder than any other part of the inhabited globe. The Yakuts number a little over 220,000. (See note A, p. 108.)

[p. 415.] The economic unit amongst the Yakuts, taking the whole territory into account, consists of four persons—two grown labourers, one youth, and one boy or old man incompetent to do full work. Ten head of cattle are regarded as indispensable for the maintenance of such a group. Above that norm the Yakuts think that comfort begins, and below it, poverty. In those districts where fish can be obtained as an adjunct, those who have ten head of cattle are well off; but where neither hunting nor fishing offers additional resources, fifteen or twenty head of cattle are indispensable to secure the existence of a family. The latter is the case in the north, on account of the duration of the winter and the badness of the meadows (see note B, p. 108). In the south, where tillage is available as an important subsidiary industry to maintain life, and where it is easy to find wages occupations in winter, the limit of independent means of existence falls to one and a half head of cattle per soul. In spite, therefore, of the wide difference between the absolute amounts of wealth indicated by these limits—from six to twenty head of cattle, *i.e.*, from 120 to 400 rubles (\$60 to \$200) of capital—all the households that are at the limit stand on the verge of distress. The least accident overthrows the security of their existence, and the least subsidiary resource gives them a chance to live and grow. Such households constitute the great mass of the population. In one *Nasleg* taken as a specimen, of 248 households, 101 are at the limit; 10 have no cattle; 74 have one head, or one and a fraction, per soul; 54 have from 3 to 9 head per soul, that is, are well-to-do in different grades; one has 12 and one has 18 head for each soul

¹ *Yakuty*, published by the Imperial Russian Geographical Society, St. Petersburg, 1896, vol. i, pp. 720. The author, a Pole, was sent as a political exile to the land of the Yakuts, where he remained more than 12 years.

in the household. The author knows only one man in the whole Yakut territory who has 500 head of cattle. There are but two or three persons in the whole country who have at their disposition from 100,000 to 200,000 rubles of capital. Such persons have won their wealth by trade, and their capital consists in wares, money, and various credits.

The limit is set to the growth of households which depend on herding alone, in the first place by the small supply of wages-labourers, and secondly by the communal ownership of land. The point is that the family consisting of four or five souls, of whom three are productive labourers, with a subsistence capital of three head of cattle per soul, constitutes an organisation which can maintain itself with hired labour. The best Yakut mower and two female rakers can make in a summer from 1,200 to 1,800 *puds* (22 to 32 tons) of hay, according to the season. This amount is sufficient to carry through the winter from twelve to fifteen head of cattle. Any household in which the above-described organisation is incomplete must hire labourers, or buy hay, or keep its cattle in a half-starved condition. On the other hand, those who have less than one head of cattle per soul must hire themselves out for wages. Under this organisation the most common and striking phenomenon is that the more independent ones get a higher price for their time and their products than those who are in distress.

The rate of wages is almost everywhere nominally the same. The men get from 35 to 40 rubles per annum with board, if they are able-bodied mowers; and women who rake, or tend cows, get from 20 to 24 rubles, with board. The rations are determined by custom; those of the men are better than those of the women. Only a small part of the wages is paid in money; generally the employers give wares, sometimes such as the employé does not need and which he must sell at a loss. It is still more customary to pay with cattle, especially with horses, either slaughtered or living. The employers try to keep the employed in debt to themselves, and to this end even encourage them in vice—for instance, in gambling. Often an employer retains a portion of the wages and threatens not to pay it at all if the labourer does not consent to work for him still another year. It is not difficult for rich men to execute such an injustice as this, on account of the power which they possess in all Yakut communities. The scarcity of labourers is the cause of this conduct of the employers, but it also causes them, when once they have hired persons, to treat them well. In families in moderate circumstances, employés are taken in on an equal footing. In the north, even in the richest households, if no strangers are present, the employé sits at table with the family. He takes part in the conversation and in household proceedings. His intercourse with the members of the family is simple and free from constraint. The Yakuts are generally polite in their intercourse, and do not like haughtiness. Employés expect the customary courtesy.

The favourite form of labour contract, from the side of the labourers, is piece-work with payment in advance, although the rate of discount for this advance is very excessive. They think it a disgrace to lend money on interest. Probably

these prejudices are due to ancient customs touching economic relations, such as lending out cattle to be fattened upon a contract, or lending out milch cows and mares for a milk return.

The Yakuts dislike to hire themselves out for wages. They return to independence if the least possibility offers. For those who are poor the struggle for independence is so hard that it is useless to talk about their laziness or lack of forethought. If they have less than one and a half head of cattle per soul, they suffer from hunger nearly all their lives. When dying of hunger, they refrain from slaughtering an animal, from fear of losing their independence. The author knows of cases in which the authorities have forced people to slaughter their cattle that they might be saved from death by starvation. Hunger periods occur in every year, during which two-thirds of the Yakut population suffers from semi-starvation for a longer or shorter time. This period is not longer than a few weeks for those whose cattle during the winter were tolerably well nourished, so that in spring they quickly recovered their vigour, or for those who have such a number of cows that the latter produce calves at different times. The poor, however, suffer hunger for months, during which they live by the alms of their more fortunate neighbours. For them the most interesting subject of conversation is, Whose cow has calved? or, Whose cow will soon do so? Sometimes it happens that all the cows in a certain neighbourhood calve at the same time; then, if there is in that district no tillage, or if the grain harvest has failed, famine ensues. Poor people when asked how they manage to live through those frightful months said, "We go to bed and cover ourselves with the coverlet." They drink brick-tea and a decoction of various herbs, and eat splinters of larch or pine, if they still have a stock of them. They cannot obtain them in winter. No axe could then split the wood, which is frozen to the hardness of stone. Where they plant grain, and the harvest is fair, the circumstances are less stringent. On the whole therefore, the dependence on chance is almost tragical. If things that must be purchased rise in price to the slightest degree, if one neighbour has deceived another, or the merchant has cheated in weight, or if calves have died, any of these incidents come as heavy blows upon the barely established equilibrium of the family budget. A few such blows throw the household into the abyss of debt, from which it rarely, or with great exertion, emerges. Two-thirds of the families are in debt; one half of them for small amounts which can be repaid, but the other half are hopelessly indebted, the debts consuming the income year by year. Even amongst those who are called rich, the expenditure rarely surpasses two or three hundred rubles per year, and this they cannot win without hired labour, because the care of the herds which are large enough to produce this net amount far surpasses the power of an average Yakut family; therefore, only a large one, with well combined forces, can get along without hired labour. There are but few such families, and any co-operative organisation is strange to the Yakuts. They prefer to work individually at their personal risk and chances. Even individual handicraftsmen do not organise regular *artels* on the Russian type.

[p. 436.] *Economic Bond of the Sib Group. Common Participation in Goods.*--The size of the *sib* group has always been determined by economic facts. By virtue of an economic shock only does the *sib* begin to split up, and then first do the notions about blood tie make themselves felt to an appreciable degree. This they do in the following manner:—Two brothers, and still more, a father and son, cannot fall into two different *sibs*; nor can grandfather and grandson, or uncle and nephew in the male line and the first degree, do so during the life of the elder. But grandsons in the male line may belong to different *sibs*, especially if the grandfather is dead. We have an especially good opportunity to observe the significance of economic motives in dividing up the *sibs*, and also to observe the insignificance of kin motives in the case of the *sibs* that are still complete, but in which new *sib* centres can already be perceived. These new centres are defined by the relations which are forming about them, although they have not yet acquired new names. They are all separated from each other by greater or less distances in space, and their territorial advantages vary. Also an important part of the property in these new group centres (house, garden, stock of hay, petty household wares and furniture), in case of the death of the owners, have no value except for members of the group in which they are. It is impossible, or not worth while, to transport them, and it is not possible to sell them, since there is no market.

In former times, when the chief wealth of the Yakuts consisted in droves of horses, the size and the conditions of subdivision or combination of the *sib* groups were entirely different. In that distant time we must believe that the consumption on the spot of products which had been obtained from the droves, or from hunting, served as the external condition of the existence and size of a *sib* group. Many traditions point to this fact. For instance, they tell us that if a Yakut slaughters an animal, the viscera, fat, and entrails are divided into portions of different size and worth, and distributed to the neighbours, who, having learned that the slaughtering was to take place, generally take turns in visiting the owner. To fail to give any neighbour a share is to make an enemy. To pass anyone over purposely is equivalent to a challenge, and will put an end to friendly relations between families. We are convinced of the antiquity of this custom by tradition, and by its dying out nowadays. In the places where civilisation has advanced the most it has lost much of its power. That it was a *sib* custom, we are convinced by certain usages at marriages and ceremonies of reconciliation. Distributions of meat are now a part of marriage ceremonies, and the chief dishes served at marriages consist of meat. The formulas of language employed in connection with this use of meat are reminders that the ceremony has created relationships between the participants.

The strength of this custom was proved by a case observed by the author, who saw the gladness of a good-for-nothing fellow, who up to that time had done nothing but receive large shares, but who suddenly, by chance, drove a fat wild reindeer into a swamp, and so in his turn was enabled to make presents to his

neighbours of portions of meat. No comparison would do justice to the self-satisfaction of this individual, when he at last served up the game which he had won. He reserved for himself almost nothing. Other things which are subject to immediate consumption, and can be distributed into small portions, are shared in the same way, especially dainties, like sugar, cookies, or other rarity. Vodka is always divided amongst all who are present, even the children getting a drop. Tobacco also is subject to this custom. It is not degrading but honourable to receive a gift of food from one who is eating, especially if he is an honoured person. It is a violation of etiquette to give little to a rich man and much to a poor man. The opposite is the rule. If one man's cow calves earlier than those of the others, custom requires that he shall share cream and milk with those neighbours who at that time have none. This explains the interest with which, in the spring time, when the cows give no milk, the Yakuts calculate and distribute information about anyone of the rich whose cow is about to calve. This also explains how the poorest people live through the starvation months. When the population is substantially equal, it is evident that these customs are not burdensome, and this is why they prevail especially amongst people of a middle class. The Yakuts would not believe the author when he told them that, in his country, there were rich and populous cities in which people sometimes died of starvation. They asked why anyone should die when he could go to eat with his neighbours?

The circumstances are in all respects more archaic in the northern provinces and more advanced in point of culture in the southern. In the latter the custom is already coming in to sell food to travellers, and even to neighbours, but in many parts of the north they consider it a shame to trade with food. Even the poorest think it an offence if it is proposed to them to take money for lodgings or food. Travellers in winter take hay from the stacks on the meadows, with which to feed their animals, and it is regarded as right. These customs all give some coherence and permanence to the petty groups of the Yakuts which wander in the woods. When travelling, so long as they are in inhabited districts, they need not fear hunger, though they take no provisions with them. The custom constitutes a system of mutual insurance against the misfortunes of life.

Paupers.—Care for the poor and unfortunate has always been regarded as an obligation of the *sib*. Impoverished families are cared for in their houses, while the helpless and paupers go about amongst the householders and take their places at the table with the members. Trifling tasks are given them to perform. The author found that the poor and middle class people treated them better than the rich did. According to the notions of the people, it is sinful to despise the unfortunate, who are, however, distinguished from professional beggars living on alms. The latter often are not poor, and it is the belief of the people that the beggars often beg out of greed. The provision for the poor, however, is of a very wretched kind, for the object of the *sib* is to organise persons of equal power and equal right, and not to provide charity.

Philosophy of Common Participation.—The custom of distributing fresh meat,¹ and other things, which has been described, was convenient and perhaps necessary in a certain state of the society. The groups remained in close neighbourhood in order to realise those advantages. (See note C, p. 108.)

The kumiss is spoiled in winter by the frost and in summer by the heat, and it does not bear transportation. The Yakuts have never known how to preserve meat by drying or smoking. Hence it was in the highest degree convenient for them to live in groups of such a size that the kumiss and the meat obtained from the cattle and horses could be used as soon as possible. They even have a tradition that horse thieves in ancient times tried to organise themselves into bands large enough to divide and eat up, in a night, the animals they had stolen. We must believe that in ancient times the fundamental grouping of the people consisted of bodies constituted upon the basis of a convenient consumption of the product of a proportionate number of animals. (See note D, p. 108.) Hence the distribution of kumiss and meat served as a symbol of peace, friendship, and union in the *sib*.

The Notion of Property.—Right of private property in the house evidently did not exist amongst the ancient Yakuts. Even now they are inclined to regard the dwelling as a common good. Anyone who enters may stay as long as he will. A traveller has a right, according to their notions, to enter any house at any hour of the day or night, and establish himself so as to drink tea or cook food, or pass the night. The master of the house does not dare to drive out, without some important and adequate reason, even one who is offensive to him. In former times they had scarcely any permanent dwellings. They were nomadic, and carried with them all of the house but the framework, which later comers, in their turn, might use. The land belonged to nobody. The herds were considered the property of each separate nomadic group. The nominal owner was the head of the group.

[p. 444.] When the Russians first came in contact with the Yakuts, the *sib* organisation had reached its highest development, and the headship of the *sib* was a dignity exclusively for war and the administration of justice. The groups were then just about what we now see. The elected government was even more nominal than it is now. All questions, as well economic as jural, were decided by a council of the elders. Even now the most independent individuals avoid making any important changes in their industry or sales or expenditures, without taking the advice of older relatives. Such conduct is approved.

Limitations of horse-herding.—The subdivision of property, and its consequence, the internal subdivision of the *sib* groups, became possible with the

¹ We are not surprised to be told that cases occur in which attempts are made to conceal the time of slaughtering, in order to escape from the custom of distribution. These are mentioned especially in the southern provinces, and are consistent with the advance of civilisation there.

gradual introduction of horned cattle, which could be kept independently and in small groups. A drove of two or three head of horses had no sense; horses must be united into droves which could roam about the neighbourhood. No distance and no care could prevent them from roaming. Therefore no Yakut family of four individuals, at the minimum, could tend a drove of ten horses, which we may regard as the minimum. Moreover, the time necessary for the constant changes of position, protection, and care of such a petty drove is not a bit less than for one, two or three times as large. We may take it as a rule that the larger the drove, the more the power of the group which owns it is set free for subsidiary occupations, hunting, fishing, and handicraft, and the better they are provided with food and implements. The social habits of the horses, which love to live in large droves, were a natural cause of the union of their keepers. The size of the droves depends at last on the size of the pastures, which vary much in these districts. Hence the differences in size of the *sib* groups amongst the Yakuts, as they are described in the traditions, consequences of which are now to be found, and which astonish us by their apparent arbitrariness. The case was changed when they moved from the grand and unbroken steppes to the small expanses broken by forests, their dwelling of to-day. In the latter places, the droves are comparatively broken up. Hence the unions of the men cannot endure. This difficulty is intensified by the necessity of speed in changing position, and of frequency in movement from meadow to meadow, when the herds are large. Consequently the economic arrangements come into strife with the traditional instincts of the *sib* and the community. We may take a drove of ten or fifteen head, consisting of five mares, one stallion, one two-year-old, one one-year-old, and two suckling colts, for the minimum unit herd of horses. We may take for the maximum herd, for a district amongst the Yakuts, from three hundred to five hundred head. The minimum would hardly suffice to keep from distress a family of four souls. The maximum would allow a community of fifty souls to live in comparative ease. Within these limits, the effort of the Yakuts to sub-divide and scatter over the country must be bounded. Some of their traditions and customs lead us to think that once there was a much greater concentration of people and accumulation of wealth amongst them than now, and that they were spread over the country even less regularly than they are now. In their legends, large expanses of territory are spoken of as being empty, while in others large numbers of people, with their cattle, are described as existing.

Out of the minimum unit drove of horses consisting of five mares, one stallion, one two-year-old, one one-year-old, and two suckling colts, only one grown horse could be killed per annum, and the kumiss would not suffice for four souls. The requirement of kumiss is from 15 to 20 litres per person per day; one mare gives that quantity only in summer, and then she is considered a very select specimen; a middling one gives only half so much. In winter many are for a time not milked, and older ones, even if the food is adequate, give in winter not more than 3 or 4 litres a day. Consequently each person needs in a year from

5,475 to 7,300 litres of kumiss. One mare gives in a year from 2,000 to 2,500 litres, if she is milked the whole year around. Hence there is needed for a grown person two and a half milch mares, and for the three grown persons in a Yakut family, seven and a half milch mares.

The largest number of settlements contain four or five huts, with twenty or thirty souls. Occasionally one is met with in which there are forty or fifty huts, and some hundreds of souls. The winter houses for the most part stand separately, and at some distance from each other, but near to the hay-stacks. In this detail the influence of the later economic system dependent upon hay is to be seen. The summer dwellings, on the other hand, seem to represent more nearly the ancient mode of life. The summer group consists of many huts which stand quite close together, although not apparently in order, but distributed according to the convenience of water and the pleasantness of the place. They are distributed so that the *sibs* stand together, which is probably an ancient feature.

In the populous nomadic settlements of ancient times, whether in the south or the north, the Yakuts arrived at the basis on which their civil existence is based. This basis was the breeding of horses. There their best instincts were nourished; arts and handicrafts took their origin; songs and legends were composed; the system of their group-life was developed and strengthened. There they acquired the custom of enduring misfortune and conquering hardships in friendship and in common.

In everything that they did in those times we seem to see a reflection of the character of the powerful animals which then constituted their chief wealth and the basis of their existence. The breeding of horses demands special qualities of mind and special knowledge, especially knowledge of geography and physiography, very careful power of observation, and sagacity in the selection of places and in the regulation of the wanderings, so as to secure good adaptation to the facts of climate, season of the year, distribution of water, and depth of snow. It demands of the drovers cleverness, courage, decision, and a knowledge how to execute quick and complicated evolutions, so as to direct, arrest, or drive on to the proper place the obstreperous herds. Hence the custom of discipline and of group-wise action, which is to this day observable amongst the Yakuts.

War and Blood-revenge.—In all their legends and traditions, the stealing of women and cattle is presented as the cause of war. Not less frequently the occasion was the obligation of blood-revenge. The blood of a man, if spilt, required atonement. The children of the murdered took vengeance on the children of the murderer to the ninth generation. (See note E, p. 108.) In ancient times the responsible person having been captured, was not killed at once, but horribly tortured.

The Yakut meeting, with ceremonies for reconciling quarrels, has to this day a *sib* character. Gifts are made for the entertainment of the blood relatives, a small part of which comes into the hands of the injured

party. Many surviving customs show how strong was once the solidarity of the *sibs*, and how deeply the feeling of responsibility for the conduct of its members had penetrated into the sentiments of the *sib*. The Yakuts are very zealous for the honour of their *sib* comrades. They like to hear the praises of their tribe, sub-tribe, or *sib*. When they hear blame of the same, they feel sorrow. Hence the wonderful righteousness of the Yakuts within the *sib*, which often excites the astonishment of the observer. A man who is entirely indifferent when he sees quarrelling, cheating, robbery, oppression and extortion, will take them very seriously to heart if he sees them happen within the *sib*, or so that a *sib* comrade is the victim, especially if the guilty person belongs to another *sib*: on the other hand, they will often shield evident wrong-doing by *sib* comrades. Their tribunals are comparatively just in *sib* affairs, but between members of their own and another *sib* they decide on behalf of their comrade. One of them explained this very easily by saying that, in a certain case, the thing at stake should have been divided equally, but that one of the parties belonged to another tribe: "Could we, for his sake, harm one of our own?" In modern times, however, in the same measure as the *sib* groups have broken up the convenience of tending herds, and have scattered themselves more widely, the active exchange of mutual services between the members has declined. The need of mutuality has disappeared; they have come in contact more rarely; their feelings have become hardened, and there remains only a dim reminiscence of a common origin.

[p. 464.] *Political and Civil Usages.*—Mass meetings, or popular assemblies, are held, in summer, in the open air, not far from the meeting-house of the *sib*. The oldest and most influential sit in the first rank, on the bare ground, with their legs crossed under them. In the second rank sit or kneel the independent but less wealthy heads of households. In the third rank are the youth, children, poor men, and often women, for the most part standing, in order the better to see and hear. In general it is the first row which decides affairs; the second row sometimes offers its remarks and amendments, but no more. The third rank listens in silence. Sometimes the passions are aroused, and they all scream at once; but the decision of the question is always submitted to the first rank. It conducts the deliberation. The orators come from its ranks. Oratory is highly esteemed, and they have some talented orators. The first rank are distinguished for riches and energy. They can submit or withhold questions; but decisions are never considered binding until confirmed by a mass meeting. According to their traditions, in ancient times, a prominent rôle in these assemblies was played by old men, who must, however, have distinguished themselves, and won prestige, by good sense, knowledge, and experience. They decided questions according to the customs, and gave advice when the *sib* was in any difficulty.

[p. 478.] The divisions of the Yakuts are the *Ulus*, the *Nasley*, and the *aga-ussa*¹ (= *sib*). Taking into account three provinces or districts, the author shows

¹ *Aga-ussa* means in Yakut father (*aga*)--*sib* (*ussa*); *Rod* also means *sib* (*ussa*).

that two *Naslegs* consist of only one *aga-ussa*, fourteen of two, fifty-eight of three, fifty-nine of four, seventeen of five. The number of those that contain more *aga-ussa* is small, but there is one each containing thirteen, fourteen, nineteen, thirty-four, and forty-three.

[p. 485.] *Land-system.*—Re-allotments of land between the *Naslegs* within the same *Ulus*, occur frequently; between the *aga-ussa* of the same *Nasleg*, still more frequently; and between the allotments of the same *aga-ussa*, almost every year, with the purpose of equalisation. There is in every *aga-ussa* a sworn functionary, chosen for a number of years, whose name is a corruption of the word deputy. Anyone, rich or poor, may be deputy, if he is a just and sensible man. He must understand all about the advantages and disadvantages of land. He has the difficult task of equalising the allotments. If he is incompetent, he makes mistakes. Sometimes he cheats intentionally, whence arise quarrels and fights. Sometimes the deputies fight, if they meet to decide a question between the *aga-ussa* of a *Nasleg*. Each *Nasleg* selects an officer, who has the oversight over the deputies in order to allay their disputes. The Yakuts say that the allotments to the *Naslegs*, within a *Ulus*, ought to be readjusted every forty years. The allotment is made by an assembly of all the officers and head men. Within the *Naslegs* the re-allotment takes place at undefined periods, when some new necessity arises; for instance, from the necessity of setting off a glebe for the church, or when meadows have been spoiled by a freshet. Nowadays the deputies act only administratively to execute the decisions of the *sib* assembly. Individuals are constantly asking for a readjustment of allotments, upon all sorts of pleas. Leaving out of account the bits thus added or subtracted, it may be said in general that individuals dispose of their allotments without limit of time, and even give them in inheritance. In the north, a certain part of the meadows is apportioned to certain homesteads. These are regarded as the inalienable property of the householder. Only gores and strips which lie further off, or are purposely left for that purpose, are subject to division. By means of them equalisation is brought about.

[p. 489.] Pastures and woods almost everywhere are in the undivided use of all the inhabitants of a locality, without regard to the *aga-ussa* or *Nasleg* to which they belong. It is true that rich men in many places have divided amongst themselves separate cattle ranges out of the common lands, and have fenced them, but their *sib* comrades look upon such land-grabbing with disfavour, and if the rich man dies or loses influence, they try to break down his enclosures and throw open the land again. There is a strife of interest between cattle owners and tillers; the latter enclose their lands; the former drive their cows home three times in the day. The enclosures make this journey longer. In general the *sib* group reconciles itself to the individual disposal of a plot of land which has been won by clearing woods or meadows, or of mowing lands obtained by drying up swamps and ponds, when it has been established by prescription, and even if the appropriated land is made inheritable, provided that the plot is not large and is all utilised by the

owner. But if the size is great, or the owner rents any of it, the *sib* asserts its rights. The only question then is whether the owner has won back from the land a remuneration for the labour and capital expended by him upon it. Often they undertake large clearings or drainages communally. Those who have a share in the land thus won are, first, those who lived there before; then all the *aga-ussa* of a *Nasleg* in proportion to their share in the work, and their need of land.

II.—MARRIAGE AND THE FAMILY.

[p. 507.] *Ancient Type of the Family.*—It is established beyond a doubt that when the Russians came in contact with the Yakuts, polygamy existed amongst the latter. (See note F, p. 108.) They had a word for all the offspring of one man, and another for his offspring by a particular wife, if the interpretation is correct. If it is it would entail the inference that once the mother family existed amongst the Yakuts. This is confirmed by the tradition that many *sibs* with father descent, and even whole *Naslegs*, got their names from women. The Yakuts have no special word for the precise designation of a family group consisting of a man, with his wife and his children. The current word is *Kergen*, but this is an ambiguous word; most probably it means *dwellers*. In answer to inquiries, the most various statements were given. The author heard this word used in the sense of all those whom the head of a household was bound to maintain, including temporary inmates.

The son of the house was no longer considered a *Kergen* when he married and established a house of his own, but all inmates and labourers, no matter what their status or relationship, are considered *Kergen*. [The author so uses the word; he does not say members of the *Kergen*.] The marriage customs and legends in which there is reference to the stealing of wives in no distant past, seem to point to an origin of this house-group from slavery. There are even direct evidences of this, for an ancient word, synonym of *Kergen-Chahar*, meant slave or cowboy, and seems to have gone out of use on that account. In the *Kergen*, the younger are subjected to the elder, and all are subject to the head, whether it be a father, older brother, grown up son, or, in rare cases, a mother, if she is a clever and energetic widow. Custom does not seem to admit sisters or aunts. The head can give away and squander everything, if he chooses. He can even give away his children as labourers to outside persons.

Exploitation of the Weak by the Strong.—Such is the declaration of all Yakuts; nevertheless, at the present time, these statements describe only a fictitious system. In fact, the Yakut family presents now a different picture. The subjection of the young and of women comes under a more general law; the subjection of the weak to the strong, and of those-who-have-not to those-who-have. The author knows of many cases in which the father, older brother, or the uncle forced the younger members of the family into marriage, or put them out to work for others under very hard conditions, taking to himself all the payment, and also

other cases in which the father disposed of the property of the son, took away from him his axe and canoe, and sold hay, mown and saved by him, completely independently. The son complained of his hard fate, but could do nothing. He also knows of a case in which parents sold their eight-year-old daughter to a Russian official who was travelling through. He saw and heard of many cases in which elders cruelly beat members of the household, especially women and children, yet he knows of an equal number of cases of an opposite character,—cases in which younger brothers played a more important rôle in the family than older brothers, in which a wife, unrestrained by the presence of strangers, behaved rudely to her sick husband, even beat him, and openly kept a lover in the house; in which a daughter, knowing that she was the only one in the house able to labour, did not obey her parents, did whatever she chose, refused an advantageous marriage, and went about with the young men before the eyes of all; in which old people did not dare to sell a pound of butter or a load of hay, or to buy anything for themselves, without asking the consent of a grown son. All these cases were not considered by anybody unusual, and did not call forth from the community any more condemnation than cruel or unjust treatment of children.

The Old.—There is no such thing as any strictly patriarchal relationships, or any deep-rooted or cultivated feeling of respect for the old, amongst the Yakuts. A young Yakut said, "They not only do not feed, nor honour, nor obey, but they scold and often beat the old people. With my own eyes, I have more than once seen Yakuts, poor and rich, bad and good, beat their fathers and their mothers." They behave especially badly with decrepit and feeble-minded parents. Their chief object in dealing with such is to wrest from them any bits of property they may still retain. Thus, as the old people become more and more defenceless, they are treated worse and worse. It was no better in ancient times. Force, the coarse force of the fist, or the force of hunger, rules in the modern Yakut family, and seems to indicate the servile origin of that family. Once the author saw how a weak old man of seventy beat with a stick his forty-year old son, who was in good health, rich, and a completely independent householder, who had just been elected to an office in the *sib*. The son stood quietly and did not dare even to evade the blows, but that old man still had an important amount of property at his disposition, and he ruled the family by the fear that he could deprive any recalcitrant one of a share in the inheritance.

Antagonism between Parents and Children.—In well-to-do families, where there is a great quantity of cattle, or where the right to large advantages from land, or the possession of well-established trade, provides an opportunity to win from hired labour, and so an important revenue is obtained, independently of personal labour the rule of the father and mother as proprietors, especially the rule of the father, is strengthened and maintained for a long time, namely, to the moment when the old people become decrepit and lose the capacity to comprehend the simplest things. Generally they die before that time. This state of things is maintained by the spread of Russian ideas and laws. In the old-fashioned Yakut

family, the economy of which is founded almost entirely on cattle-breeding, and in which constant personal supervision is required, thus making personal strength and initiative indispensable, the moment of the transfer of rule into the hands of the son is reached much earlier. It occurs still earlier in poor families which live exclusively by hand-labour and by the industry of the strongest and best endowed. The old people strive against this tendency in vain. The young people naturally strive to avail themselves as fully as possible of the results of their labour, and as soon as they feel strong enough, they begin to struggle for their rights. The parents are dependent on the sons, who could go away to earn wages. Hence they say: "It is more advantageous for us Yakuts, in this frozen country of ours, to have many children than to have much money and cattle. Children are our capital, if they are good. It is hard to get good labourers, even for large wages, but a son, when he grows up, is a labourer who costs nothing; nevertheless, it is hard to rear children." The author knew of cases in which wives put up with the presence of mistresses in the house, considering that an inevitable consequence of their own childlessness. The death of children is accepted coldly in populous districts, but in the thinly settled ones is sincerely bewailed. Sometimes they take to drink or to idleness when they have lost their children.

The greatest number of suicides are old people who fear a lonely old age. The treatment they receive fully accounts for this.

If the parents, on account of their own deficiencies, or the exceptional hard-heartedness of a son, have not been able to discipline him, then sooner or later a strife arises in the family. The women are in such cases more yielding. They are physically weaker and have scarcely any rights. As members of the *sib*, they have no rights to land, property, or independent existence. They surrender very soon. Most frequently they make no attempt to resist: there is no place for them outside of the family. It is another matter for the boys. They accustom themselves to form judgments on communal questions; they quickly acquire a knowledge of the rights of men, and become saturated with the communal spirit which refuses to acknowledge any privileges except personal superiority and work. In proportion as the quantity of labour accomplished by them increases, and in that way their cleverness and skill in the arts of life are proved, they demand more confidently and persistently that attention shall be given to their voices in the family, and that their wishes shall be fulfilled. If not they are not willing to perform the labour which is required of them, or do it so negligently, while tormenting their elders with constant reproaches, that the latter gradually yield. As soon as a father perceives this disposition in his son, he hastens to give him a separate allotment, if his own circumstances will possibly admit of it; otherwise the power inevitably goes over to the son. Sometimes the elders continue to hold a nominal authority: sometimes the son allows this consolation, as long as they live; but nothing is really done without the sanction of the actual sovereign of the family. The young man takes the place of the old one as the object of attention and obedience, and he makes himself master, as well of the

parents as of the labourers who are without rights or voice in the family. A man who was reproached for his behaviour to his mother, said: "Let her cry; let her go hungry. She made me cry more than once, and she begrudged me my food. She used to beat me for trifles."

[p. 517.] *Privileges of the Head of the Family. Women.*—In a family in which the rights and powers have been reduced to equilibrium, so that all the relations of the members are established, the dominion of the head, whoever he is, over the labour and the property of the members is unlimited. The organisation is really servile. Especially pitiful is the position of the women, who play no rôle in the *sib*, and therefore can expect no protection from anybody. The author advised a woman to appeal to the *sib*, when she complained that her husband exploited her labour and that of her half-grown son: that he was extravagant and wasteful, so that he was likely to reduce them to pauperism. "The head!" said she, "how often I have complained to him! he listens and says nothing, and after that my husband is still more quarrelsome and more perverse." Another woman said: "The man is the master; it is necessary to obey him; he works abroad and we at home." This work abroad consists for the most part in taking part in the village assemblies and in constant loafing from house to house. It is true that the man acquires information about wages and prices; but he also keeps to himself the monopoly of all external relations, and even for the absence of any of the housemates without his consent he demands a strict account. To acquire an extra gain, win food or money, or earn something by outside work is considered more desirable than to follow heavy daily labour which would maintain the life of the family from day to day. If the head of a household has grown-up children, the amount of work which he does is very insignificant. He works like the others only at the hay-harvest; the rest of the time he wanders about, looking out, it is true, for the external interests of the family to which his care is now restricted, although formerly it extended to the *sib*. Inside the house he is treated with almost slavish respect and consideration. His presence puts an end to cheerfulness, the excuse for which is that he must maintain respect.

It is a custom, the reason for which seems to be the desire of the father not to lose power in the house, that he often gives allotments to his sons and takes into the house in their place a grandson, or a nephew, or a hired man. These persons, after they have lived some years in the house, and worked in the family acquire the same right to a part of the inheritance as if they had been children. The Yakuts say that a father may deprive a son of his inheritance, but the author never knew an example of it. He knew of cases in which sons sued fathers, alleging that the allotments which they received after many years' labour were not as large as they should have been.

[p. 520.] *The Descent of Property.*—A Yakut declared that a father would give equal shares of his property during his lifetime to his sons and his daughters, or that he would give larger shares to his daughters because they need more, since they go as wives to live among strangers, where, if they bring little

they meet with little respect. In fact, however, it is most frequently the reverse ; the sons get more. Houses and land go to them. These cannot be alienated into another *sib*, and are therefore excluded from female inheritance. When the parents die, all which was reserved for them during life goes to the sons. The married daughters get no part in it. Unmarried daughters rank as little children, and pass, until they are married, under the tutelage of their brothers, uncles, or other relatives of the father in the male line. If there are none such, the *sib* becomes the guardian, but even near relatives on the side of the mother are in no case permitted to be guardians.

Wills were unknown amongst the ancient Yakuts. The wishes of a dying person were sacredly executed, but they consisted chiefly of directions how and where the grave should be made, and what horse should be killed in order that it might be buried with the dying man, and what chattels should be buried with him. Nowadays the rich make wills, but their validity is not recognised unless they are written by a functionary, the scribe or the clergyman of the *sib*. This costs not less than a horse or a cow.

From the point of view of the *sib*, uncles, nephews, and male cousins of all degrees have a better right to the inheritance than a married daughter. A widow, if she is married a second time into a second *sib*, loses rights even to her children. The author knows of cases in which fellow-members of the *sib*, in no direct relation to the deceased, inherited his property for lack of relatives of his in the male line, while his own sister, who had married into another *sib*, received nothing at all. He mentions another case in which a man, having paid the marriage price for a bride, died. His *sib* comrades demanded back a part of the bride-price and divided it amongst themselves, on the ground that the man had never been her husband. Even if a father has given property to a married daughter during his life, or by will, it has not been done without suits and reproaches, because the property went into another *sib*. If there is no collision between family affairs and *sib* right, the *sib* unwillingly interferes with the former.

[p. 525.] *Birth Rate. Infant Mortality.*—According to the assertions of the Yakuts, the fecundity of their women is, on the average, ten children for one husband ; sometimes they bear twenty, or even more, and that is by no means so rare as amongst the Russians. The author knew of one case of twenty-two births, another of twenty, and another of nineteen. In most cases the number varies between five and ten.

The author gives a case of a woman married at twenty, who lived with her husband thirty years. She bore nine children, of whom seven died in childhood, one was born dead, and one daughter grew up. Another woman had nine children, all of whom died ; another woman had eight and lost them all. Another woman, out of ten, brought up two ; another brought up five out of twenty ; another brought up seven out of nineteen ; another, one out of six ; another, out of five, brought up all. Another woman, eighty years old, who could not tell at what age she was married, but thought that it was at fifteen, bore twenty-two

children, the last one when she was sixty years old. Eleven of them died in childhood.

The men, especially the rich, marry very young. The author knew a man of fourteen, who had been married two years. The ceremony had not yet been performed, but he lived with his wife in the home of her father, because the bride-price had been paid for her. They think that early marriages are unfruitful. Infant mortality amongst them is frightful, as the above statements show. This is due to the misery in which they live, on account of which they cannot give care to their children, even when they are rich.

[p. 527.] *Childbirth. Infancy.*—According to the ideas of the Yakuts, the woman has the greater share in procreation. A man whose wife gave birth to a monstrosity refused any responsibility for it, saying that he had had twenty-two children by his seven wives; this was the first by his eighth wife.

An old woman takes a new-born child and carries it immediately before the blazing fire. She sprinkles it with water from her mouth, the water sometimes being warm and sometimes cold, and then quickly washes it. Then she smears it with fresh cream. Generally the child never receives any other bath. If it does, it is at long intervals. They think that bathing exposes the child to take cold. They are not in the habit of bathing themselves. They often smear a child with cream, thinking this very advantageous to it. The Yakut mothers have not much milk. Not a child grows up without using a sucking horn. The mothers suckle the children long. The author saw five-year-old boys who demanded the breast when they saw their little brothers enjoying it. Children are often suckled at night to keep them quiet, but in the daytime they lie cold, damp, and neglected, while their uproar fills the house, the mother being employed in her household work. Some mothers employ a means of putting their children to sleep, especially if they are fretful boys, which often causes spermatorrhea.

[p. 529.] When a child begins to sit up, which takes place at the end of three months, it is no longer called a baby, but has another class-name. In ancient times they gave it its first name at this point of time; it got a second one when it could draw a bow. Their babies creep at six months, and stand and walk at a year. So after they are six months old, they crawl all over the floor of the house. The Yakuts think that a child which does not yet understand human language understands the talk of the fire, the singing of birds, the language of beasts, lifeless objects and spirits; but that he loses this gift when he acquires human speech. This superstition may be due to the habit of children to stay about the fire, the warmest and pleasantest place in the house, and also the most interesting, where a child stands staring at the flames with his big black eyes and listening to the hissing and snapping of the fire. Their children look the prettiest to Europeans when they are from five to ten years old, because then they are most like our children; but then they are by no means sprightly or enterprising, and they are excessively obedient. Even when playing, they do not make half the noise and movement which our children make. When there are several in a

family, you may not notice their presence for a long time. They hide themselves away in the corners, or sit in a ring on the floor, busy with something or other, talking, quarrelling, telling stories, singing,—but all of it only half aloud. They are hardly ever so far carried away as to cry aloud or to sing aloud. At a threatening shout of a grown person, they come to silence and scatter. Only when they are alone do they become lively. This happens in summer, in the woods and groves, and in the fields. They are very fond of assembling to play there.

[p. 536.] *Wedding Ceremonies.*—On the occasion of a wedding at which the author was present, the bridegroom's procession arranged to reach the house of the bride at dawn of day. At that hour the guests were assembled at the house. The groom and the go-between each led a horse loaded with fresh meat. A lad on horseback, without saddle, galloped out at full speed to meet the groom's procession; but when he was about forty fathoms from them, he suddenly stopped his horse, turned, and rode back again. One of the groomsmen followed him, but not being able to overtake him, turned and rejoined his own party. When the groom's party rode into the court, the father of the bride held the stirrup for the father of the groom; the others of the bride's party, according to rank and order, performed the same office for the members of the groom's party. The young people carried into the house the meat and other things brought by the groom's party, but the groom remained at the gate, turning his face to the east, and looking at the spreading dawn. He crossed himself zealously and made obeisance. When all had taken their places, the cousin of the groom, with a whip in his hand, which he had not laid aside at all, went out and conducted the groom into the house. The latter came in with his head bent down and his eyes covered. He was very young, and deep emotion was visible on his face. The father and mother of the bride met him with the sacred images in their hands. They blessed him. At the same time the one who was conducting him, seized him by the neck from behind and bent him down three times at the feet of the parents of the bride. After that, the groom with his cousin brought in still more packages of meat and laid them there before the fire. The groom uncovered one of the packages, in which was enclosed the head of a horse cooked whole; he picked out from beneath the eyes three bits of fat and cast them one by one on the fire. After that they carried the horse's head away and laid it in the chief corner on the ground; but they led the groom into the corner on the right, where they caused him to be seated with his face to the wall, and his back to the people, on what they called the last bunk to the right. On the corresponding one to the left, behind a curtain, sat the bride. They both remained in these places the whole time, in their best garments, including cap and gloves, and he even never laid his whip out of his hand. All the groom's party in like manner kept on their best out-of-door garments, in spite of the heat of the blazing fire. The parents of the bride were dressed in the same manner. The rest of those present a little later laid aside their out-of-door garments.

The entertainment began. The feasters were all seated in an established order which never varied to the end of the entertainment. A distant relative of the

bride, in full out-of-door dress, acting as servant, gave to the father of the groom a wooden cup full of kumiss; then he gave one to each of the companions of the groom. Having held the cups a little while, they gave them back to him, that he might pour out a little on the fire. Then they received the cups again and drank a little. The father of the groom then gave his cup to the father of the bride, who drank a little and gave it to his wife, who passed it on to their other relatives. Then the uncle of the groom gave his cup to the father of the groom. He gave it to the father of the bride, and so it went the rounds. Then they served breakfast of cold boiled meat and tea with milk and sugar, and a piece of rye bread for selected ones amongst the guests. Soon after that they killed an ox and a horse. While some of the young people dressed these, others prepared the kettles, and brought wood and water, and melted ice in the neighbouring hut. They boiled the meat in the presence of the guests, in big iron kettles; then they laid it on trestles before the fire. First of all, of course, they boiled the viscera, the entrails infused with blood, the heart, the stomach, etc. In cutting up the animals, they took care that the shin bones should remain unbroken. (See note G, p. 108.) When the meal was ready, the young people of the *sib* of the bride, although they were persons of entirely independent position, undertook the service of the guests. They spread hay on the ground before the visitors, and spread on this the skins of the mare and ox which had just been slaughtered. "Such was the table of the ancient Yakuts," they said in explanation.

The author, when he saw the immense pile of fresh meat, which was laid before each one, asked, "Do they expect them to eat all that themselves?" He was answered with a merry laugh.

Women were not admitted to the table at all. They took their portions off into the corners, where they ate them. At the beginning of the meal, the master of the house gave to each one a glass of vodka. The young and the poor got less, sometimes very little indeed, but the intention was to pass by nobody. Then at a signal given by the master of the house, each one drew his knife and set to work to eat, which they did with a uniformity of movement as if they had been drilled to it. After a while, the father of the groom, rising with a choice bit of meat in his hand, made an appropriate speech and gave the meat to the father of the bride. This he repeated a little later with the mother of the bride, then with her other relatives, and then with the most important members of her *sib*. Then the other companions of the groom complimented the parents and relatives of the bride in the same manner. The point of all the speeches was, "We are now related to each other; we will hereafter live in friendship and concord." This exchange of compliments became noisy and irregular. The meat which they could not eat was made into packages by the women, to be taken home as gifts for those who had not come to the wedding. In the evening, the supper was conducted in the same manner. Pieces of meat were exchanged with speeches and good wishes. After supper, the ceremony with the kumiss was repeated. Before supper, they drank vodka together. One would drink a little from his cup and then give the

rest to another whom he desired to compliment. On the second day, all was repeated. They slaughtered a cow. All was the same except that at supper a blind singer sang, whereupon one and another made gifts to him of pieces of meat just like the treatment of a bard, of which we find a description in the *Odyssey*. Then the young people played games and practised feats of strength and skill.

On the third day the dinner was served early. The bridegroom's party had thrown open their out-of-door garments, on account of the stifling heat produced in the hut by the number of persons, the blazing fire, and the steam from the kettles. They had not been invited to do so, but the circumstances fully excused them. They now re-fastened these garments and went away. The bundles of meat were brought in, cut up, and divided amongst the relatives of the bride so that everyone should have at least a small portion. This was the meat which the groom's party had brought with them, and which had been stored in the store-house. It was carefully examined and valued. In the evening the groom's companions came back. During this absence they had been entertained in a neighbouring hut to which the mistress of the bride's house had previously sent the necessary supplies. They were met in the court upon their return with the same ceremony as at first. After supper games were played again by the young people, and at last a long legend was recited by the blind bard.

It was not until the fourth day, after dinner, that the relatives of the groom prepared to depart for good. When they had mounted their horses, a big wooden cup of kumiss was served to each one of them, and then the whole *cortège*, in the same order in which it had arrived, the father of the groom at the head, and the groom last, were escorted by the relatives of the bride around the three hitching posts for horses, which were set in the middle of the court. They went about these posts three times in the course of the sun. Each time, when they had completed a circuit, they stopped, and each horseman poured out kumiss from his cup on the mane of his horse. When they had drunk the remainder of the kumiss and returned the cups to the escort, they departed at a gallop through the open gateway. The solemn ceremony was then considered ended, yet this was only half of the wedding. It is true that from that time the bride and groom considered themselves man and wife, but not until the whole bride-price had been paid, *i.e.*, sometimes after two or three years, did the husband conduct his wife to his own house. Then they again celebrated the same feasts three days long, in the same manner, the groom sitting again for the whole time in one corner, with his face to the wall, and the bride in another, behind a curtain of soft leather.

A Yakut wedding nowadays strikes us as remarkable on account of the silence, and the poverty of the ceremonies. There is no singing, no allegorical representation, and no dancing. They say that formerly a shaman was present, who invoked on the pair the blessing of the heavenly spirits. In the southern districts the wedding has undergone Russian influence. The elements that were connected with horse-breeding have disappeared. Among the poor, the mare's

head, which in old times was worshipped by the young people, has disappeared also the kumiss and all the ceremonies connected with it. Brandy and vodka have taken its place; tables have taken the place of the skins spread on the floor; instead of the exchange of meat, they touch their drinking cups and kiss. In some places they even try to bring out the bride and groom from their corners to sit at the table. This last feature as yet makes way slowly, and one of the most characteristic features still is the non-participation of the bride and groom, as if the others wanted to forget them. A share of the food is served to them, but the others do not talk with them, do not mention their names, and the bride is carefully shut away, while the groom tries to escape attention as much as possible.

Bride-price.—The greatest part of the expense of a wedding falls on the groom. It is an essential part of the payment for the bride. The expense varies from a few rubles to two thousand rubles; the average is perhaps one hundred rubles. This expenditure would be beyond the means of the majority, if it were not that a large part of it comes back under the form of the bride's dowry. If the total payment made by the groom be divided into its parts, the part spent for entertainment is spent by the groom without return; but the payment to the parents of the bride, and the gifts to her relatives, are restored in the gift with her. She brings household furniture, garments, silver articles, the stipulated number of mares and cows, corresponding to the number of animals contributed by the groom. She also brings colts and calves voluntarily contributed by her parents and not mentioned in the contract. She also brings gifts in the shape of meat and butter. Each wooden cup which she brings ought to contain a little butter. She also brings one fox skin and nine ermine skins, or at least one ermine skin. This is hung up over the bed where the unmarried women sleep. Later it is carried into the store-house, where it is carefully preserved until the first child is born; then they carry it into the wood or give it to the shaman. At any rate it disappears.

Either under pretence of getting ready the bride's outfit, or on account of her youth and inexperience, the parents do not give their daughter to her husband immediately after the marriage, even if there has been a religious marriage, and the bride-price has been paid, and they have agreed to do this soon. Formerly the delay was often four or five years, and the custom of marrying children, even when very young, existed still earlier. During all the delay, the husband visits his wife at his leisure, but every time he ought to bring a gift to the wife's parents, a quarter or two of meat, a fox skin, or some other present. These gifts are a very unwelcome addition to the bride-price. When the time comes for the bride to go to her husband's house, she is very coldly received by his relatives if she brings less than was expected. If she brings less than was agreed upon, quarrels arise. Often there is a complete rupture, if the marriage has not taken place in church. In the latter case, they boycott her and she suffers all kinds of petty household persecutions which poison her existence,

[p. 549.] The bride-price is shared by the parents, older brothers, uncles, and guardians of the bride, and, in the case of orphan working girls, by the master. Each gets something, be it ever so little, as a recognition of surrender by him of a claim on the woman. Not a single well-bred Yakut girl would consent to go to her husband without a bride-price. She would be degraded in her own eyes and according to the views of her people. It would mean that she was not worth any price, was friendless, or an outcast. It can be understood, therefore, that the Yakut women look down upon the Russian women, who, as they say, pay somebody to take them. Even young widows who have returned to their families are paid for, though at a lower rate than maidens. Older widows who have lived for a time independently with a minor son, or as work-women, marry without a bride-price; but the Yakuts have an original comment on this. They say that "she wanted to exploit herself," or they say that she has been paid for once, and that if she marries again, nobody loses anything. The author asked one of them, "Who lost anything when a maiden was married?" "The parents," said he. "They had the trouble and expense of rearing her. They ought to obtain an equivalent for that. Besides that, they lose a worker out of the house. How is it that you Russians do not understand that?" "But," said the author, "if a son is married, they get nothing, and even give him something." "The son is another thing," was the reply. "In the first place, his labour produces more for his parents before his marriage, and then he doesn't go away; he remains in the same *sib*; he is our man; he will bear his share of taxes and burdens." This presents the current view of this matter amongst them. "We fed and reared," they say, "and others are to get the benefit. We will take something for the expenditure."

III.—MARITAL USAGES. THE STATUS OF WOMEN.

[p. 552.] *War Captives and Stolen Women as Brides.*—In ancient times, the Yakuts had a name for a man whom a defeated hero gave to his conqueror as a compensation for sparing his own life. Such persons later were in fact slaves and were included in the gifts with a bride. If they were females, they became concubines of the master. Such a slave person was called an *enne*, and this word has now come to be used as an adjective for whatever is given with a bride. In the legends, the ancient heroes are represented as coming home, after their adventures, with a wife and a rich dower (*enne*); but this dower took its origin probably in very ancient times, when the present system of exogamic marriage began first among the Yakuts. All the evidence goes to show that foreign-born wives were originally captives in war, in connection with whom, of course, there could be no dower. Their own tradition is that formerly, if a man who was hunting in the forest with others saw a handsome woman, they watched to see where her husband went to hunt. Then they fell upon him, killed him, and took away his wife. If they could not take her by force they took her by stratagem, enticing her out of her house by a call to help her husband bring home his game.

Then they carried her off by force, in the same manner in which they brought home war captives. In their epic poetry, the stealing of women appears as a constant motive. The heroes help each other to find women outside the tribe, and they obtain them as payment for their heroic deeds, or for help given to others. In all the narratives about wars, maidens fall to the victors as prize or ransom (*enne*). A legend is mentioned in which three Yakuts, being offended by Tunguses, undertook war against them. The latter begged for mercy and offered a choice of three maidens. The Yakuts came to terms with them and made a wedding. The author thinks that in the wedding ceremonies of the Yakuts we must recognise a survival of a line of conduct which was once a completely consistent and well rounded ceremony for the conclusion of peace. Whether the stealing of women was the cause of the preceding hostilities, or the relatives gave the woman voluntarily in compensation for a man who had been killed, or for stolen cattle, is immaterial. In any case she was regarded as *booty*, and the wedding resembled a *peace negotiation and conclusion*. To this day, both the parties who come into relations with each other at a wedding behave to each other during the feast with respect, yet still with a certain concealed distrust and jealousy. They are constantly on the look-out lest the others get the better of them in the gifts, or cheat them. The groom's party do not move at all; their horses are saddled, as are also those of the bride's relatives who have come to the wedding. A Yakut who was asked why he did not unsaddle his horse at a wedding answered, "Differences are apt to arise at a wedding."

The more unequal are the powers of the families, or more properly, the *sibs*, which are united by a wedding, the more the material interests of the weaker party suffer. The payment to overcome the opposition of the bride, that is to say, her love to her blood relatives, is increased. It is noteworthy that during the wedding, custom strictly forbids the bride and groom to see each other. The bride is permitted, indeed, being hidden herself, to look at the groom when he goes to water his horse; but it is regarded as improper for the groom to even make an attempt to see the bride. Neither ought his companions and blood relatives to see her.

If the wedding has much in it that is parallel to the conclusion of a peace, the demand in marriage, and the "investigation" which precedes it, remind us at all points of a military recognisance. A man who goes about looking for a wife keeps silence, and enters into no relations, even of conversation, with those he visits. The girls laugh at him and the young men (her friends) treat him with jealous satire.

In ancient times, the parents often paid a bride-price for a girl three or four years old to be the wife of a son. They took her and brought her up that she might become accustomed to the family of her husband. Sometimes they became attached to her and the couple lived happily together. They slept together from childhood, considering each other husband and wife; but often they regarded each

other "like the devil." If either one died before the marriage, an endless quarrel began about the return of the bride-price. The Russian clergy now refuse to celebrate these marriages.

Betrothal.—To accomplish a betrothal, three male relatives of the groom go on horseback to the house of the desired girl. Upon entering this, they sit down in the place of honour, where they sit talking about indifferent matters, and watching what goes on in the house for one or two days. Then they pack up their things and place them on their horses, and when quite ready to leave on their journey, they return into the house. If the groom has come with them, he now stays outside. The go-betweens sit down again and wait awhile. Then the oldest of them, in silence, throws upon the table the skin of a fox. Then the father of the bride puts on his cap and sits down behind the table in the place where he sits at the wedding, and asks them what they want. They in turn, calling the bride a young mare, or a valuable beast, conduct a negotiation, asking whether she is for sale. When they get an affirmative reply, they agree upon the amount of the bride-price, the dower, the time of the wedding, the time when the groom shall have his wife, the mode of paying the bride-price, and all the details. All is negotiated with great pains in order to avoid future disputes. Then the guests speedily depart. Sometimes fox skins, vodka, and money are left on the table when they go out for the first time; and if, when they return, they see that these things have been taken away, they proceed to negotiate the terms. The bride has a very small share in this negotiation. Sometimes they ask her whether she is willing, but this is a modern innovation. If a man meets with a refusal of the girl he asks for, he usually insists that another shall be given to him in the same house, if there is another there. The Yakuts consider it an injury to meet with a refusal, and especially in the case of a proposal of marriage. They think it improper to send the go-betweens, under any circumstances whatsoever, within a year to a girl who has given a refusal to a man.

[p. 558.] *Exogamy.*—A wife is always taken from another *sib*. Even in the south, until the present time, this custom is strictly observed. In the north, the author knows of but one case of a marriage within the *sib*; but all condemned that marriage, and when the new-made wife, after the wedding, became blind, they ascribed this calamity to the breach of the ancient custom. Well-to-do men will not take a wife even within the *Nusleg*. Custom is even unfavourable to the arrangement when the brother of the wife is near at hand, even though he belongs to another *sib*. They say, "A girl, if she lives in her own birth-place (after her marriage), is not happy;" also, "A happy daughter marries far away from her birth-place;" also, "It is well to have water near by, but relatives far off." If we may take it for established that the first wives from abroad were war captives, then the custom to take wives from afar is easily understood. Wives could not well be stolen within the circle of connected *sibs* within which the ancient nomadic wanderings took place. The author thinks that the notion of any peaceful evolution of exogamic marriage amongst the Yakuts, out of a more primitive

form, must be absolutely rejected. Their sayings and traditions, and the survivals of wedding ceremonies, agree in proving the closest relation of marriage with war and the stealing of women. Yet whether the effort to find wives outside arose as a contingent consequence of war, or was a cause of war, or a thing which arose independently in its own good season, under the influence of physiological or economic motives, is hard to decide. The Yakuts engaged in breeding animals could observe in their animals the advantages of crossing with females of another blood-group. Such unions were more fruitful and the progeny were stronger. Besides that, the stallions, when they chased out of the herds the young rivals born there, and very eagerly introduced into the herds mares from outside, must have incited the Yakuts to imitation. The economic motives, such as the gratuitous labour of slaves, and the introduction of horned cattle, which made possible the existence of smaller societal groups with a denser population at particular spots, encouraged the tendency to maintain exogamy.

Ancient Endogamy.—The author is convinced by all his means of information that there was formerly an altogether different organisation of the family and system of marriage, from those which he at present finds in existence. It is possible that both forms existed for a long time, and the more ancient one disappeared so recently that the people have still a fresh recollection of it. A Yakut said, "In ancient times the Yakuts had many wives, and long before that, your younger sister was your wife; your mother possibly; the wife of your brother possibly."

Some, when asked, knew nothing of this; others asserted that sisters formerly were wives, but mothers never. Other testimony also was obtained that formerly marriages took place, not only within the *sib*, but even between very near relatives. They say that when God made Adam and his wife, the latter bore seven girls and eight boys. Each man, except the youngest, had a wife. The latter asked God what he should do for a wife. God answered, "If you cannot get along without one, sleep secretly with the wives of your brothers." This is a current legend amongst them, and agrees with other current sayings and notions. We may suppose that, even if it is borrowed, it took root in the memory of the people because it corresponded with dim reminiscences out of their own antiquity. They say, "When the migration took place from the south, the Yakuts took their own sisters to wife, since there were no women of other tribes at hand." "The ancient Yakuts took wives in this way: if one of two brothers had a daughter and another a son, the children became man and wife." "In ancient times, when a youth was able to draw the bow, he took one of his younger sisters to wife and went afar off, where he built a house." "In ancient times, if a sister, whether older or younger, was married to a man of another *sib*, her brothers never let her depart as a virgin. If she went away as a virgin, they considered that they had lost their 'luck.'" The expression which they use here for the treatment accorded to the sister is the one now in use in the sense of sex-intercourse, but it means exactly "to make one a mistress of the house."

Incest, which according to the notions of Russians, is such an abominable thing, rather causes laughter than horror amongst the Yakuts. Cases of such unions are met with more frequently amongst them than amongst Russians. The author knows of two cases in which brother and sister lived together in wedlock, about which everybody knew. The authorities of the *sib*, frightened by the outcry about another case, made it known to the local Russian clergyman. In one case, children were born. He also knows of a case of wedlock between mother and son, and of another in which two brothers lived with the same wife. In their legends and folk tales, we see that in ancient times the feeling of attachment in the brother and sister tie was far more strongly developed than in the marriage tie, or even in the parent and child tie. The first of these prevailed over all others. They often call the wives of the legendary heroes "sisters," using a distinct name for older sister, and another for younger sister. Almost every hero, whether good or bad, has by his side sisters, who act as his protectors and comrades. The folk tales contain many cases of the devoted service of sisters to brothers. It is a custom of long standing, which still exists, that two brothers of one *sib* marry two sisters of another. It is noteworthy that now at a wedding the sister of the bride keeps her head carefully covered all the time. It is considered a great impropriety that the groom or one of his comrades should see her hair.

[p. 562.] *Terminology for Family Relationships.*—Among the many difficulties of describing the ancient marriage system, one arises from the fact that the ancient words for family relationships had different senses from what the same words have now.¹ For instance, the Yakuts have no word for the general sense of brother or sister. If they must have such a word, they use the Russian word. They have special names for older brothers, younger brothers, older sisters, and younger sisters. These words, with some attributives which are generally omitted in vituperative speech, are used to address uncles, nephews, aunts, grandchildren of different grades, and even step-fathers and step-mothers, although the two latter are commonly called father and mother. It follows from this that the family falls into two groups—those who were born earlier and those who were born later. These groups form the background of the terminology for family relationships. The majority of other words for relationship are constructed out of these. As far as the author has observed, the names derived from the denominatives for the younger group are given only to blood relatives and *sib* comrades. For the relatives by marriage, there are special denominatives, amongst which the division into those born earlier and those born later is not so strictly carried out. He thinks that in the beginning, the Yakuts had no words at all for brother or for sister, and that the words now used for younger brother, younger sister, etc., were terms, not so much for family relationships, as for *sib* relationships, and meant simply older or younger *sib* comrades. It is impossible now to determine whether a certain word ought to be translated "older brother," "older uncle" or "older nephew," and so of the others. If now a certain

¹ See the note on p. 109.

denominative may be interpreted in the sense of a *sib* comrade of earlier birth, then the tradition that brothers married sisters, with especial emphasis on the fact that they were younger sisters, loses the apparent preciseness of its meaning. The tradition would then refer, not so much to incest as, in a general way, to endogamy. It would then indicate that at a certain moment in the development of endogamy, the custom existed that men should marry women born later than themselves. We have no hope of finding out in view of the uncertainty in the sense of the terms of relationship, whether there was any limitation in respect to sisters or daughters of the full blood. In many denominatives, we seem to find indirect evidence that such further limitations existed.

Boys ten or twelve years of age do not eat with their sisters; they do not lie down to sleep with them on the same bed. The boy is given a separate bed, which involves a special expense. They do it apparently not from modesty, but in obedience to an ancient prohibition in the nature of a taboo. These very sisters, however, may go completely naked, entirely untroubled by the presence of their grown brothers, and they carry on with the latter sometimes conversations and jests which would cover with embarrassment the most cynical European man. It is possible that these restrictions arose later, for the sake of protecting virginity, the loss of which, when exogamy came to be established, began to have influence on the amount of the bride-price. However that may be, they prove that a necessity was felt, at a more or less remote time, of adopting this with other measures to establish a physical separation between brothers and sisters, so that we must regard any union of the two, which may at one time have existed, as a passing phenomenon. It is needless to speak about youth of the same *sib* but another family. Irregular unions between these are even now an ordinary phenomenon.

An analysis of the terms of relationship amongst the Yakuts does not show who might, or who might not, under endogamy, be husband and wife. It would be interesting, with a view to this question, to examine the mistakes in the application by the Yakuts to *sib* comrades of the denominative which means those persons whom one might marry. Some of them said that this denominative could not be employed within the *sib*; others would not allow it any place in the genealogical schedule, although they admitted that such a term of relationship began to be applicable, as some said, in the ninth generation, and others, in the fourth. Others of them constantly confused this term with another, by which they indicate the third degree of blood relationship, corresponding to our grand-child. The Yakuts employ the term "child" or "my child" not only to their own proper children, but also to the children of brothers, or of sisters, or even to brothers and sisters themselves, if they are very much younger. They have not, therefore, in their genealogical terminology any words for son and daughter which testify directly to a blood relationship between specific persons. The word which we translate "son" strictly means "boy," "youth," "young person." It was formerly used as a collective for the body of warriors, or the young men of the

tribe or *sib*. With the addition of the possessive "my," this term is addressed vituperatively by old men not only to their own sons by blood, but also to any young males who stand in any relationship to them. In a narrow sense, it may be addressed to one's own son, or, with a prefix, to one's grandson, and then with other proper prefixes, to grandnephews of the second and third degree. The terms for females are entirely parallel in sense and use.

The lack of words to distinguish between "son" and "boy," "daughter" and "girl," is not due to the poverty of the language; on the contrary, their genealogical terms astonish us by their abundance and variety. Not only do they distinguish those of earlier and later birth, but they have a special denominative for younger brothers, which is used only by women. They have a special name for the wife of a husband's older brother, and another for the wife of the husband's younger brother, and other similar peculiarities which seem incomprehensible, not only to us, but also to the Yakuts of to-day.

In view of the great abundance of the denominatives for relationships which we should regard as relatively remote, of the lack of special terms for "son" and "daughter," and of the confusion of these with more remote degrees of relationship and likewise with the expressions "boy" and "girl," which they use to indicate especially sex and point of growth, we infer beyond a doubt that, at the time when the present system of genealogical relationships took its origin amongst the Yakuts, *the precise genetic connection of any given boy with his parents had no especial denomination*. All the old people in the *sib* called all the young people in the *sib*, up to a certain point of growth, by the same denominatives. The notion of the immediate relationship of the children of a given pair to that pair was not sharply defined until a later point of time; then first was there a denominative for it. It is impossible that this was a consequence of the education in the same place and in the same manner, by the whole horde or *sib*, of all its children; and also that it proceeded from, or accompanied, the extremely unsettled and unclear marriage relationships. In favour of the former conjecture is the fact that the *sib* still considers itself in some sense the proprietor of its children. For instance, it does not allow the immediate parents to alienate a child, especially a boy, into another *sib*, without its express consent; also, when a widow marries a second time into a second *sib*, the grandfathers, uncles, and even more remote relatives take away her boy, if not at once, then at least when he grows up and becomes able to labour, and still again, the strange custom of a fictitious stealing of children in these families in which several successively die, and of giving them to others to bring up, seems to manifest a notion as if the appropriation to one's self of one's children was an unlawful act, worthy of punishment.¹

¹ The stealing of children is accomplished with certain ceremonies. The mother, although she herself asks her friends to do the stealing, ought not to know the moment when it is executed. In the place of the stolen child they put a puppy or a doll. It is required that the child should be taken out through a window, and that the story should then be set afloat that he was stolen by passing travellers. (See table of relationships in the Polish edition.)

[p. 567.] In favour of the explanation of the vague relationship between a child and its parents by the vagueness of the marriage relationship is the analysis of the terms "father," "mother," "husband" and "wife," and also some ancient customs and existing *mores*. There is no name for "father" amongst the Yakuts, which admits of a natural and simple explanation, like the word for "mother." The word for "mother" means "the procreatress," but the word for "father" should be translated "older man." When the author asked questions to clear up this point, the persons inquired of asked him to indicate more precisely whether the person he meant was born earlier or later than the one named; and this they did with respect to women as well as men. They explained that the word in question meant "father," but that in some phrases it was necessary to understand it as "elder." They have a corresponding word for "older sister" or "older aunt"; yet when the phrase refers to the point of growth, this word means only "a woman who was born earlier." The lack of a special name for "father" is the more strange because the Yakuts have special terms for more remote relatives up as far as the great grandfather, although even then the female origin is more clearly expressed than the male origin. This vagueness in regard to the male blood tie, side by side with the definiteness of the female connection with the offspring, is very significant. If, in connection with this, we also remember that the *familia*, in the Latin sense of the word, bears a name which means "mother-sib" (*ye-ussa*), and that many "father-sib" (*aga-ussa*) of the present time, and even *Naslegs*, according to tradition, take their origin from women, and that one of the favourite motives of the Yakut folk tales, on a line with the search for a wife, is the search for a "father," then we have reason to devote particular attention to this class of facts. It is a current fact in the legends that the heroes do not know who their fathers were.

The author does not venture to draw more positive conclusions with respect to the ancient marriage institution, but he thinks it safe to assume that it was, in its origin, entirely different from the present one, not only by virtue of the fact that endogamy then prevailed, but also on account of the peculiar relations between the sexes. Unions between them, inside of the *sib*, were exceedingly free and non-permanent. The children could know only their mothers, and they could know them only up to a certain point of their own age; after that they forgot this relationship. It was supplanted by a feeling of belonging to a certain group. Within that group there were only "men" and "women," older or younger than the person in question. There are out-of-the-way places amongst them now where the current word of the language for "wife" is unknown; they meet it with laughter. The words they use mean "woman" or "old woman" or "mistress of the house." A word for "husband" exists nowhere amongst the Yakuts. The current word means properly "man." They have no words for "divorce," "widow," or "widower." The first is entirely unknown to them. They have adopted the Russian word for "widow," but they apply it to every bereaved person. One of their proverbs is:—"A woman without a man is the same as a herd of cattle

without a master." A widow with her property and her little children passes over to the brothers, uncles, or nephews of the husband, and in all probability, in ancient times, she not infrequently became the concubine of one of them. There is proof in the customs that there was a time when, even during the life of the husband, it was demanded that measures should be taken against eventual claims of the nearest relatives of the men upon wives who had come from abroad.

Relatives-in-law.—There was a well known custom according to which a bride should avoid showing herself or her uncovered body to her father-in-law. In ancient times, they say, a bride concealed herself for seven years from her father-in-law, and from the brothers and other masculine relatives of her husband. The young people lived in the left, or women's half of the house, and behind the screen, which was always found in the ancient houses. Looking through a crack in this, she watched until her husband's male relatives were busy, and then, concealing herself carefully behind the chimney [which stood free in the middle of the house], she went out into the yard, rarely through the door of the house, more frequently through the stable. The men also tried not to meet her, saying, "The poor child will be ashamed." If a meeting could not be avoided, the young woman put a mask on her face. Sometimes she died before her father-in-law had seen her face. Not until then was it proper for him to look at her so as to know whether she was pretty or what she was like. Nowadays the young wives only avoid showing to their male relatives-in-law the uncovered body. Amongst the rich, they avoid going about in the presence of these in the chemise alone. They put on a short gown. In some places, they lay especial emphasis on the fact that it is a shame for young wives to show their uncovered hair and feet to the male relatives of their husbands. On the other side, the male relatives of the husband ought to avoid showing to the young wife the body uncovered above the elbow or the sole of the foot, and they ought to avoid indecent expressions and vulgar vituperatives in her presence. Nevertheless, the author heard nothing amongst them about the status of the daughter-in-law. That the whole custom which has just been described is not a manifestation of respect for the husband's relatives, but a prudential device, is to be seen from the fact that nothing of the kind is observed in presence of the mother-in-law and old women. Also that those observances are not the result of a specially delicate modesty is proved by the fact that even young girls constantly twist thread upon the naked thigh, unembarrassed by the presence of men who do not belong to the household; nor do they show any embarrassment if a strange man comes upon them when uncovered to the waist. The one thing which they do not like, and at which they show anger, is that such persons look carefully at their uncovered feet. The former custom of peculiar behaviour towards male relatives-in-law is gradually being abandoned. Also the former simplicity of their *mores*, with lack of shame in uncovering the body, is disappearing.

In all probability, endogamy did not at once give way to exogamy. Both forms long existed and competed with each other for exclusive validity. It may

be that the first captive or slave wives were a violation of some customs of the *sib*, and that they concealed themselves in the beginning from all the *sib* relatives of the husband, since these only endured them and did not recognise them. Unfriendly behaviour toward the wives within the bounds of the *sib* undoubtedly occurred.

Reasons for Polygamy.—The Yakuts gave up polygamy at the beginning of the last century on their conversion to Christianity. They petitioned the government against the abolition of polygamy in the following terms: "Rich Yakuts had many wives for oversight of the numerous houses and cattle which ordinarily were in different places; for wives took more zealous care of property than indifferent hired persons. Hence the housekeeping was improved and the property was increased under polygamy." The Christianised Chukches gave a similar justification for polygamy. They said that they could not get on without a plurality of wives, because, for fear of contagious diseases, they were compelled to break up and scatter their herds of reindeer. [A wife was required for the care of each sub-division.]

According to the official figures of 1889, there were amongst the Yakuts 110,982 men and 110,221 women. Hence polygamy was impossible for the great mass of the people.

The price of a bride was formerly not less than ten head of cattle. Midden-dorf says that in his time the price was ten head of cattle of each kind, ten mares, ten cows, ten stallions, and ten bulls, from 500 to 5,000 rubles in value. Hence to have more than one wife was a privilege of the richest.

Status of Women.—A wife, according to the notion of the Yakuts, is above all things a household labourer; she guards and increases the property; she has no rights in the family; she can punish a disobedient child, and that is all. She has no property; her husband has the right to squander even her dower to the last head of cattle and the last chemise. They more often beat women than children. Outside of the family, the rights of the wife are still less than in it. Civil right she has absolutely none. In ancient times the husband has the right of life and death over her. Once a war captive, she is now a purchased slave. Exogamy and permanent marriage have completely put an end to the independence of the Yakut woman. Those customs have excluded her from membership in the *sib*. Outside of the family, there remains no place for her, and at the head of the new form of the family stands her husband. If a Yakut woman is not married, her position after the death of her parents becomes still harder; she is delivered over to a permanent inferiority; to the reproaches and the exploitation of all her relatives, brother, uncles, nephews, and, worst of all, their wives and children. This is why the Yakut women are very anxious to be married, and sincerely mourn in case of the death of even ill-natured and cruel husbands. An orphan girl, or a young childless widow, is compelled to run about from one guardian to another, or to live with some one of them in the capacity of a permanent and unconditional labourer. Her possessions such a guardian considers as his own property, and if she should marry, it is rarely the case that

she can recover them at his hands. No one has any desire to take her part, or to enter into a quarrel with her guardian, who is sure to be a man of importance in the *sib*. The men zealously guard their own privilege of exclusive participation in the meetings of the *sib*. Women who cannot endure the cruel usage of their husbands rarely complain to the *sib* of the husband, but prefer to take refuge under the protection of their own; the latter generally sends them back. Nevertheless, the flight of a wife brings so much unpleasant experience upon the husband, and gives occasion for so much ridicule, that husbands avoid provoking their wives to this point. Cases in which wives ran away from their husbands were especially numerous just at the time when Christianity was preached amongst the Yakuts. Conversion to Christianity and marriage with Christians freed the women from prosecution by the authorities of the *sib*. Great numbers of women took advantage of this. After Christianity had been established, the device ceased to be available.

A wife can expect no protection in the *sib* of her husband, and in his immediate household all unite heartily against her, since she is an outsider from another *sib*. The maiden sisters of the husband enjoy an especially bad reputation amongst Yakut women. Evidently there is here a traditional enmity, but often it is founded in the nature of things. The author gives a case known to him, in which a woman of exceptional merit and ability was persecuted by the maiden sisters of her husband, who spoke ill of her to him and stimulated him to harshness against her. He also knows cases of suicide by young wives under the persecution of the husband and his relatives. Neither law nor customary right offers any protection against these persecutions. If anything restrains them, it is the trouble and expense of buying another wife. In this way the protection of the *sib* of the woman, translated now into a large ransom, has done the women a good service. It has softened the family *mores*, and taught their masters to give them some protection. Their position has been little changed up to the present time. Of course there are exceptions. There are women who rule their husbands as European women do; there are disobedient daughters, and there are energetic widows, who keep large households in terror; but this can be the case amongst the Yakuts only when the circumstances are favourable to a far greater degree than amongst Russians. Everything is against the women; the conditions of labour, which require a family organisation, and the land tenure which recognises the men only as having a share; and traditions and education.

A boy almost from the cradle hears that he is the master, the worker, the future support and hope of the family. They feed and clothe him better than they do the girls; they compel his sisters to give way to him in a quarrel; and they inspire him with contempt for his sisters and in general for feminine occupations. Amongst their proverbs are: "A woman's mind is shorter than her hair"; "Women, though they have long hair, are narrow-minded." Amongst their sayings are: "We consider our daughters as outsiders; they will be obliged to go away to other people." "Whatever work a woman may do, there is no profit from

her." "If a woman passes between me and my fire, she can spoil for me both my handicraft and my luck." "We Yakuts in old times despised women. We thought them unclean." Various epithets for "womanish," in a contemptuous sense, are met with at every step. In the folk tales women are objects of ridicule, and in the traditions the heroes call each other "women" in vituperation.

Women, especially when they are pregnant, are forbidden by custom to eat some dishes and to touch some things. They are considered in some sense unclean. They spoil the gun of a hunter, and lessen the good fortune of a handicraftsman. All this has brought the women to recognise from childhood their own worthlessness and rightlessness, and has made them servile and cringing. Yakut women are in general far more obedient and humble than Russian women. You will hear any well-bred Yakut woman say with conviction: "The husband is our lord; he feeds us; he gets us what we need, and protects us." This is the current opinion. The author has more than once heard hard-working women express it, although they did not only their own work, but that of their husbands; and also clever women, who far surpassed in cultivation their stupid husbands. When such a husband beat such a wife, she was asked why she did not give him a good thrashing, and then he would let her alone. "It's impossible," she answered with a smile, "he is the husband. If I should beat him, people would cease to respect him, and that would be bad for both of us, and for our children."

[p. 578.] *Sex Mores.*—The Yakuts see nothing immoral in illicit love, provided only that nobody suffers material loss by it. It is true that parents will scold a daughter, if her conduct threatens to deprive them of their gain from the bride-price; but if once they have lost hope of marrying her off, or if the bride-price has been spent, then they manifest complete indifference to her conduct. The time which young wives spend with their parents after the wedding is the merriest and freest time they ever know. The young men hover about them like flies, but the parents pretend to take no notice, and even in most cases take advantage in their household work of the serviceability of these aspirants. They only strive that these connections may not be long continued, and may not become notorious; for this might bring upon them unpleasant consequences from the family of the husband, and might lessen the quantity of gifts which they might expect later. Maidens who no longer expect marriage are not restrained at all, and if they observe decorum, it is only from habit and out of respect to custom. The young women of the community in which the author lived, in autumn, with the knowledge of the old people, went out to live in a separate house, on the bank of a lake, where every evening young men of the neighbourhood went to join them. They spent the evening in singing, story-telling and witty conversation. The author having chanced upon them one evening, they entertained him with food and tea, and when he started to leave, the twenty-two year old sister of the man with whom he lived, who at home was ordinarily very modest and reserved, openly proposed herself to him for the night. At the time of weddings, and at the festivity of the *sib* (*esseah*) the oversight over the maidens is exceedingly weakened.

The current opinion does not approve of mothers who take their young daughters with them to those places. In games the young men are free with their hands and the girls do not especially defend themselves. The author was a witness of proceedings which fully confirmed the statement above made that sisters are never allowed to depart in marriage as virgins. [This shows that exogamy cannot be due to horror of incest.] The birth of an illegitimate child, and illegitimacy, are not regarded as a disgrace. If such children are vigorous and active they are treated in the family with the same affection as lawful children, or even with more.

[p. 581.] *Love in Marriage.*—The author devoted attention to the question, what place is occupied in marriage, and in the life of the people, by love? Evidently in marriage they consider it superfluous. They esteem more highly a peaceful status, founded on friendship, esteem, and recognition of the solidarity of interests, than any passionate attraction. Previous acquaintance between bride and groom is regarded as superfluous. Most marriages are brought about without the participation or consent of the young people. Only an extreme repugnance to each other on the part of the two, as a consequence of which a passionate and stubborn protest is manifested, may *sometimes* win attention. If such a protest is made by the man, it more frequently is respected, but they compel daughters, even grown women and widows, by force, and without discussion, to enter into marriage against their will. For this purpose they beat them, or threaten to drive them out destitute from the house. The author mentions a case in which a man compelled the widow of his brother to take as her husband a man whom she did not like, by the threat to take away her children and property from her. She was living at the time in open union with the brother of the husband who was forced upon her. It must not be understood that the feeling of love is unknown to the Yakuts, or that they do not know how to value it. In their popular songs, which the boys and girls sing under their voices when sitting at work, there is manifested a well-defined ideal of beauty. In these songs, just as in European love songs, black eyebrows, an erect figure, rounded hips, flashing eyes, silvery tones of the voice, etc., are praised. Sometimes they also speak in honour of mental and moral qualities, such as a pure heart, cleverness, accessibility, industry on the part of men, and on the part of women, tenderness, self-sacrifice, and modesty.

[p. 614.] *Notion of the other World.*—The Yakuts feel the joy of life, but trouble themselves little about the morrow, especially about the morrow of death. The notion of the purpose of existence, and of the futurity of all living things, of the end of the world, and of all that which happens to men after the end of life is very weakly developed amongst them; and even that little about these subjects which they borrowed with Christianity from the Russians has faded into the background of their minds. With the exception of some shadowy conceptions of the Biblical paradise and hell, they have scarcely any beliefs about the connection between this life and the other life, in the way of rewards and punishments. The author quotes a description of Hades and of the souls living there as follows:

"Beyond the eight grades of heaven, on the west side, where there is no day, but constant, gloomy night, where there is no summer, but only the winter wind whistles, with a reversed, wretched, and irregular course of the gloomy, nocturnal sun turned upside down, with a reversed circuit of the crooked moon, with maidens who never get husbands, with youths who never take wives, with stallions whom the mares never accept, with bulls whom the cows never accept, consisting of a house of stone and iron, so built that the top part of it is narrow, the bottom part flattened out, and the middle bulging."

Mortuary and Funerary Usages.—The Yakuts have a custom of making presents to their acquaintances before death. They give away cattle, chattels, and more rarely, clothing and money. They think that washing the corpse is obligatory; but they put it off till the last thing in order to avoid superfluous trouble and busying themselves unpleasantly with the corpse. The dying person is often dressed in his grave-clothes while still alive. These clothes, even amongst the poorest people, are kept in store for this purpose; so that they are new or scarcely worn at all. One thing about which the dying Yakut really cares is that some domestic animal may be slaughtered immediately after his death, in order that, riding on it, or with it, he may accomplish his journey into the lower world. With this purpose for men, they slaughter oxen and horses, and for women, cows, young ones if the wealth of the deceased admits of a choice, and of course they select by preference beasts of burden on which one can ride, and above all, fat ones. The spirits of the dead will have to drive before them cows and calves with a switch; or to lead them by ropes tied around the horns, which is attended with some inconvenience. Poor people kill the most worthless of the animals which they have. In the north, they often kill reindeer, but whether they kill sledge-dogs, the author does not know: he thinks not. The labourers who make the coffins and dig the graves, the literary persons who read the Psalter over the deceased, and the neighbours who visit the house at this time, are fed with the meat of the slaughtered animals. In the north, where in general all their customs have been better preserved, and where now they are observed with greater accuracy, even the very poorest families try to provide for the funeral feast of a member some animal, even if it is only a sucking calf. Sometimes they sacrifice for this purpose the last miserable cow. A Russian soldier at a military station wanted a monument set up on the grave of his brother who had died at that place while on a journey. "If you want to hire us for that purpose," said the Yakuts to him, "then you must kill an animal, a calf or a reindeer. No blood has been poured out on the grave of your brother, and we are afraid." If a well-to-do householder dies, and his relatives offer only a miserable funeral feast, then in the other world, the demons will pursue and torment his spirit, saying to him: "Is that your cattle? It is miserable. Is that your funeral feast?"

When the soul, in spite of the feast before death, and the expected funeral feast, and the other consolations, does not want to depart, and the dying man is tormented in a prolonged agony, then they place by the bed a cup of water, in

order that the soul before its departure may have the possibility of bathing itself. The corpse, when dressed, is placed in the chief corner of the house, on the bench, where it lies three days. The rites of the Russian church are performed over it, reading the Psalter, burning candles, incense, etc. The grave should be dug down a fathom or more to the ground which never thaws, in order that the body and the clothing may remain intact as long as possible. If there is not upon the grave elevation a cross and monument, then the angel of the resurrection will not know that a human being is buried there. The angel does not like a bad odour, and would avoid the place. It would be a mistake also to make the grave too deep, for the voice of the angel cannot be heard more than three fathoms down. All metallic ornaments are carefully removed from the grave clothes. Strings of leather or fibre are used in place of buttons and clasps. They leave only the cross hung from the neck and the betrothal ring, and in the case of women, the ear-rings; but these must in no case be of silver, but of brass. Poor people even make them of wood.

When the coffin is ready, they put the body in it and cover it over with white cotton cloth. In the left hand they place a passport [they use this word], in order that the ghost may be received into paradise, where it will live as it did on earth. If it had no passport, those of the other world would say to it, "Friend, you have gone astray," and it would have to go on beyond the forty-four lands where the demons live. On the third day, in the morning, they either carry the coffin, or place it on an ox, never on a horse, in order to bring it to the grave. Nobody accompanies it but the bearers and the grave-digger, and these make haste to finish their task as quickly as possible and hurry away home. When returning they would not for anything look backwards, but when they come into the gateway of the enclosure, or the door of the house, they themselves go, and they lead the beasts by which the corpse was carried, across a bonfire, lighted by them, built of the chips and shavings left over from the coffin, and also of the straw on which the corpse had lain. The spades, sleigh, and in general all that which was used in any way whatever for the interment, they break up and leave on the grave elevation. If they bury a child, then they hang up there on a tree his cradle, and they leave there his playthings. Formerly they left on the grave food, furniture, tools, dishes, and other objects indispensable in life. Now that custom has died out. In the north, on ancient graves, the author often found rusted and broken kettles, knives, spear-points, arrow-points, stirrups, and rings from harnesses and saddles,—all broken, punctured, and spoiled, with the purpose, as the natives explain, that the dead might not be able with them to harm the living.

Shamans and *shamanesses* are buried in just the same manner as ordinary people, but without the ceremonies of the church, somewhere in a remote nook in a grove or in a forest opening, which latter place is especially beloved by spirits and *shamans*. On a tree near the grave, they hang up the drum and magical dress of the deceased. They bury those persons with great haste by night, or at evening, and always afterwards carefully avoid the places where they are buried.

Superstitions about the Dead.—In general, the remains of a deceased person, wherever buried, inspire a Yakut with great fear. Such remains cause great interferences with nature, arousing winds, blizzards, and bad weather. The remains of a *shaman* produce all these phenomena in a very extraordinary degree. If, after a burial, the wind blows, that is a good thing, because the wind blows away all traces left by the deceased; otherwise upon these traces it is possible that many more living souls might go away into the lower world. In ancient times the Yakuts disposed of their dead on the branches of trees, or on narrow wooden platforms raised upon two posts. Even now such structures may be found in places in the woods. This was a foreign custom borrowed by the Yakuts from the Tunguses and the Yukagirs. In some districts the people who are a little well-to-do, in the case of a death, at once abandon the house, if not forever, at least for a time. They say there (in the Kolymask district) that in ancient times, when anyone died, the inhabitants fled from the house, leaving in it the corpse with all the goods which belonged to the person when he was alive.

[p. 621.] *The Old and the Helpless.*—A local tradition is met with that in ancient times, if an old person became extremely decrepit, or if anyone became ill beyond hope of recovery, such person generally begged his beloved children or relatives to bury him. Then the neighbours were called together, the best and fattest cattle were slaughtered, and they feasted for three days, during which time the one who was to die, dressed in his best travelling clothes, sat in the foremost place and received from all who were present marks of respect and the best pieces of food. On the third day the relative chosen by him led him into the wood and unexpectedly thrust him into a hole previously prepared. They then left him together with vessels, tools, and food, to die of hunger. Sometimes an old man and wife were buried together; sometimes an ox or horse was buried alive with them; and sometimes a saddled horse was tied up to a post set in the ground near by, and left there to die of hunger. This tradition is met with on the Aldan River.

A fine tree attracts the attention of the Yakut. A Yakut will charge his friends to bury him under such a tree. Gmelin (II, 447) says that formerly they burned their dead, or placed them in trees, or left them in the huts where they died, and which all others left. There was also a custom to burn, on a separate fire, a beloved slave of the deceased, in order that he might serve his master in the other world. This custom was brought to an end by the Russian conquest.

Goblinism and Demonism.—During the time that the corpse is unburied, now not more than three days, the spirit does not leave the earth; the demons drive it about in all the places where it was accustomed to be during life, which makes it hard for anyone who had travelled much while alive. During that time, the ghost makes its presence known to the living by different knocks and sounds. Sometimes it can be heard to weep and complain; sometimes it is possible to see how it is trying to carry on its former household tasks. It gives hay to the cattle, or washes dishes, or handles straps, or rummages in the boxes in the store-room.

Once in a house in which the author was, all with the exception of himself heard the rustling and knocking of the ghosts of two old people recently deceased, in the walls. When the head of the animal which had constituted the funeral feast was eaten, the old people went away and became quiet. Some ghosts never come to rest; such a ghost is called a *yor*. Any ghost may become a *yor* if, when he is asked in the other world what he left on earth, he answers, "House, cattle, husband or wife, children, father, mother, relatives," and, when asked if he wants to go back to them, answers "Yes." That is why a *yor* most frequently torments his own nearest relatives. He hinders them from living their own lives, and from taking any pleasure, by constantly reminding them of himself. The relationships which surrounded the deceased during life also have influence on the question whether he will turn into a *yor*, but the most frequent case is that some ceremony has not been accurately performed; that some piece of meat or fat has not been completely eaten up. In a certain case they said that on the day after a wedding, the deceased brother and sister of the bride began to torment her by the pranks of a *yor*, because the wedding party had forgotten to make a libation of vodka, and to cast a bit of the fat or butter or meat on the fire. It was necessary then to call a *shaman*, or the bride would suffer from the *yors* all her life.

An aged Yakut woman told the author that when she was a child, she once became very ill. Her father called in a *shaman*, who went through his performances for seven days, calling on all the demons; but they all answered, "We are not the ones,"—and her life was despaired of. Then by chance there came to the hut a person who saw predictive dreams; he lay down and dreamed. When he awoke, he told that he saw in his dream how the deceased grandfather of the child, on the mother's side, sat by the chimney, and having put his feet on the hearth, warmed them while he stirred up with his stick the ashes and talked to himself, saying, "They do not see me with their eyes; they do not hear me with their ears; from the beloved child I will never depart. I will sit here to get something; to eat something." As soon as they knew this, the *shaman* began his arts again, and finally compelled the old man to acknowledge his presence. He was stubborn for a long time, saying, "I will not go. I will not go. I will not eat the child. I love her very much. That is why I caress her, but she does not endure that." Finally the mother and father begged the old man to go away, and he went. The child recovered.

All who die in childhood, all who do not live out their appointed term, all who are murdered or die suddenly, suicides and drowned persons, all who are buried and go to eternity without the rites of the church, become *yors*. In ancient times everyone who died became a *yor*, but with the introduction of Christianity, their number has been greatly diminished. The souls of *shamans* and *shamanesses*, of witches and sorcerers, of evil and envious persons, and of those who are hot-tempered, or are out of the ordinary kind, by virtue of something or other, become *yors*. They serve the higher powers as labourers. Having entered into living

persons, they cripple their bodies, spoil their eyes and their entrails, break their bones, make them hysterical, throw them out of their senses ; but sometimes endow them with magical powers and so make *shamans* of them.

Shamans and Shamanesses.—A *shaman* whose name meant "The-man-who-fell-from-heaven," told the author about his career as a *shaman*. He was sixty years old, of middle stature, a dried up, muscular old man, although it was evident that he had once been vigorous and active. Even when seen, he could still perform shamanistic rites, jump and dance the whole night through without becoming weary. He had travelled from the northern to the southern extremities of the Yakut territory. His countenance was dark and full of active expression. His features resembled the Tungus type. The pupil of his eye was surrounded by a double ring of a dull green colour. When he was practising his magic, his eyes took on a peculiar, unpleasant dull glare, and an expression of idiocy, and their persistent stare, as the author observed, excited and disturbed those upon whom he fixed it. Another *shaman* who was observed had the same peculiarities of the eyes. In general, there is in the appearance of a *shaman* something peculiar, which enabled the author, after some practice, to distinguish them with great certainty in the midst of a number of persons who were present. They are distinguished by a certain energy and mobility of the muscles of the face, which generally amongst the Yakuts are immobile. There is also in their movements a noticeable spryness. Besides this, in the north, they all without exception wear their hair long enough to fall on their shoulders. Generally they braid it behind the head into a queue, or tie it into a tuft. In the south, near the city of Yakutsk, where the clergy and government persecute them, and where they are compelled to hide, long hair is rare. "The-man-who-fell-from-heaven" declared that he did not like long hair because the little *yors* frisk about in it and torment him. He could not get rid of them without cutting it off. Some *shamans* are as passionately devoted to their calling as drunkards to drink. This man had several times been condemned to punishment ; his professional dress and drum had been burned ; his hair had been cut off, and he had been compelled to make a number of obeisances and to fast. He told the author, "We do not carry on this calling without paying for it. Our masters (the spirits) keep a zealous watch over us, and woe betide us afterwards if we do not satisfy them ! But we cannot quit it ; we cannot cease to practice *shaman* rites. Yet we do no evil."

The amount of payment given to a *shaman* differs. He is paid only in case his sorcery produces the desired result. Then he sometimes gets twenty-five rubles, or even more. Generally he is paid one ruble and his entertainment. Besides that he eats, and in some places takes home with him, a part of the meat of the animal sacrificed at the ceremony. The shamanistic gift is not hereditary, although there are some popular sayings which indicate a notion of some blood relationship between *shamans*. His guardian spirit is believed, at the death of a *shaman*, to seek a new residence in one of his blood relatives. This guardian spirit is essential to every *shaman*. Even the greater *shamans* must have a tutelary spirit

(*amagat*). This animal form is the one which the *shaman* assumes in the spirit-world. It may be compared with the Manito of the Red Indian, and is known in Yakut as *ye-keela* (= mother-animal). All *shamans* hide their *ye-keela* carefully. (See the Polish edition, p. 396.) Only once in the year, when the last snow melts and the whole ground becomes black, do these animal forms of the *shamans* show themselves on earth. Then the spirits of the *shamans* embodied in them rush hither and thither. Ordinary people do not perceive them, but only the eyes of the sorcerers. The strong and bold *ye-keela* fly about with noise and with zealous activity, but the weak ones creep about timidly. The *ye-keela* of the *shamanesses* are remarkable for excessive jealousy and quarrelsomeness, and if a real sorceress is found amongst them, she will give way to no one. Inexperienced or jealous *shamans* often get into fights. The consequence is disease or death for the one whose familiar spirit has been slain.

It does not depend on the will of the *shaman* whether he will obtain a guardian and protecting spirit (*amagat*) and *ye-keela*, that is to say, the qualities which belong to such. It either comes to pass accidentally, or is predestinated from above. "The-man-who-fell-from-heaven" told how he got a guardian *amagat* as follows: "Once when I was travelling in the north, I had gathered on the mountain a pile of wood. It was necessary for me to cook my dinner at once, so I set fire to the pile of wood. It happened, however, that a distinguished Tungus *shaman* had been buried beneath the place where the wood pile was. His spirit took possession of me." When this man performs his rites, the Tungus origin of his *amagat* is shown by the fact that he mutters Tungus words and makes Tungus gestures. Different spirits come to him when performing; for instance, a Russian devil, the daughter of a demon, with a demon youth, as well as the Tungus spirit. The first shows Russian characteristics. He asks for vodka, and a maiden. The second and third behave themselves in an extremely free and easy manner, and, without ceremony, they ask those who are present whether they have *pudenda*. It will not do at all to answer these questions affirmatively. He who does so will become impotent. The demon youth mutilates the females, and the girl demon the males.

The mightiest sorcerers are those whose guardian spirits are sent by Ulutoyon, the great deity himself. Of such there could be, they said, in the whole land of the Yakuts, only four at a time, corresponding to the four *Uluses* of the Yakuts which were first formed. In each of these *Uluses* there are special *sibs* which are distinguished for strength in sorcery, in the midst of which, from time to time, a great *shaman* appears.

[p. 631.] The further north we go, the greater ability do the *shamans* manifest. The *shamanesses* have greater might than the men. In general the feminine element has a very prominent rôle in sorcery amongst the Yakuts. In the Kolmyck district the *shamans*, for want of any special dress, put on women's dress. They wear their hair long and comb and braid it as women do. According to the popular belief, any *shaman* of more than ordinary power can bear children

like a woman. It is narrated of one of them that he gave birth several times ; amongst the rest, to a fox. Another gave birth to a raven, and the birth was so difficult that he nearly died. They give birth also to gulls, ducks and puppies. The whole proceeding, in sorcery, has a fantastic character. The songs are richly embellished with suggestions and parallels chiefly borrowed from the domain of sex functions. The dances constantly pass over into indecent gestures and movements.

Smiths.—*Smiths* stand in a close and peculiar relation to *shamans*. Popular sayings are ; “*Smiths* and *shamans* come out of one nest.” “*Smiths* and *shamans* stand on the same plane.” “The wife of a *shaman* is to be respected ; the wife of a *smith* is worthy of honour.” *Smiths* also are able to cure diseases, to give counsel and to make predictions ; yet their dexterities lack any magical character ; they are only clever men who know a great deal, and whose fingers are expert. *Smiths*, especially in the north, generally transmit the craft from father to son. In the ninth generation a *smith* obtains almost supernatural qualities, and the more of a man’s ancestors were *smiths*, the more real these qualities are. In the legends, mention is often made of *smiths* ; they are called an honoured band. Spirits are, above all, afraid of the clink of iron and of the roar of the bellows in activity. In the Kolymsk *Ulus*, a *shaman* was not willing to perform until the author should take out from the hut his box of instruments, and after the *shaman* had failed, he explained to the bystanders that the spirits are afraid of the *smith* (the author), and therefore will not come at the call. Only in the ninth generation can a *smith* without danger for himself forge the iron ornaments of the *shaman*’s professional dress and drum, or the brazen breastplate with the figure of a man, which represents the tutelary spirit of the *shaman* and is put on when he is about to perform. The saying is : “If a *smith* who has forged the decorations of a *shaman* has not enough of the qualities of his own *smith*-ancestors, if the sound of their hammers and the flash of their fires do not surround him on every side, then birds with crooked claws and beaks will tear his heart.” Amongst such venerated hereditary smiths, the tools have acquired souls, so that they can give out sounds of themselves. On a fine professional dress of a *shaman*, there will be from thirty to forty pounds of iron. The dress costs from three to fifteen rubles. [p. 635.] According to the common belief, the metallic attachments of the *shaman*’s dress have the peculiarity that they do not rust ; they have a soul.

Leechcraft.—The *shamans* cure all diseases, but especially such as are mysterious, being nervous affections, such as hysterics, mental derangement, convulsions, and St. Vitus’ dance ; also impotence, sterility, puerperal fever, etc. ; then diseases of the internal organs, especially such as cause the patient to groan, scream, and toss about ; then also wounds, broken and decayed bones, headache, inflammation of the eyes, rheumatic fever ; besides these also all epidemic diseases and consumption ; but this last they treat only with a view to alleviation, considering it incurable. They refuse to treat diarrhœa, scarlet fever, measles, small-pox, syphilis, scrofula, and leprosy, which they call “the great disease.”

They are especially afraid of small-pox, and take care not to perform their rites in a house where a case of it has recently occurred. They call small-pox and measles "old women," and say that they are two Russian sisters dressed in Russian fashion, who go to visit in person those houses where they have marked their victims. All diseases come from evil spirits who have taken possession of men. Methods of cure are always of the same kind, and consist in propitiating or driving away the uninvited guest. The simplest method of cure is by fire. A boy whose wounded finger became inflamed, came to the conclusion, which the bystanders shared, that a *yor* had established itself in the finger. Desiring to drive it out, he took a burning coal and began to apply it around the place while blowing upon it. When the burned flesh began to blister, and then burst with a little crackle, then the curious group which had crowded around him flew back with a cry of terror, and the wounded boy, with a smile of self-satisfaction, said:—"You saw how he jumped out." A man who had the rheumatism had his body marked all over with deep burnings. As soon as he had any pain, he applied fire to the seat of it.

[p. 637.] *Exorcism.*—In order to drive out demons which torment people in sleep, it is a good plan to put any iron cutting instruments under the bed; or to put near by any iron rod, axe, or other tool. The most trustworthy thing of all, although not always applicable, is fire, placed between the victim and his tormentor. An expiring fire-brand cast down by the threshold of the house door is often used by the Yakuts to prevent evil spirits from getting into the house. Often when they first bring into the stable beasts which they have newly obtained, they lead them through fire. Not only sounds and objects, but people possess the power, some of them temporarily, others permanently, without exertion, to infuse terror into the invisible powers. For instance, a man who has killed a bear can cure some diseases.

Observation justifies the division of *shamans* into great, middling, and petty. Some of them dispose of light and darkness in such a masterly manner, also of silence and incantation; the modulation of the voice is so flexible; the gestures so peculiar and expressive; the blows of the drum and the tone of them correspond so well to the moment: and all is intertwined with such an original series of unexpected words, witty observations, artistic and often elegant metaphors, that involuntarily you give yourself up to the charm of watching, this wild and free evocation of a wild and free spirit.

In the northern part of the Yakut territory, when the *shaman* is about to perform under the auspices of some householder, the latter having selected the best straps he possesses, ties a kind of double noose, which is then put around the shoulders of the *shaman* in order to hold him by the free end of this strap while he is dancing, so that the spirits may not steal him away.

[p. 645.] The dance of the *shaman* figures the journey to heaven in company with the spirits and the sacrificed cattle. In ancient times there were *shamans* who actually went to heaven and saw those who were there. There were some

even who were so clever that instead of real cattle they took to heaven a fictitious "shadowy" mare; but such *shamans* are not received in heaven. A cow offered in sacrifice is tied to the first of a series of posts; a rope is tied to this post, and then to each of the others in the series, rising higher and higher from the ground as it goes on. A rag is tied to this line between each pair of posts.

[p. 654.] *Deities.*—Ai-toyon is the personification of existence in general. That part of existence which is manifested in each living thing is personified in a special deity called Ulu-toyon. The latter manifests himself sometimes as a powerful, and angry chastiser. Then he gives commands to his subordinates, or himself, incarnated in an animal or something else appears on the earth. All calamities, torments, and unhappiness, all diseases and sufferings, are gods of his household, and related, subordinates of his mighty hand. However he by no means wishes the annihilation of the living; on the contrary, by his mighty power he restrains all these calamities, which if he did not do so, would submerge the earth and in a moment wash away everything living from its face.

Superstitions about Fire.—The spirit of fire is a grey-haired, garrulous, restless eternally fussy old man. What he is whispering and shuffling about so perpetually few understand. The *shaman* understands it, and also the little child whose ear has not yet learned to distinguish human speech. The fire understands well what they are saying and doing round about it; therefore it is dangerous to hurt the feelings of the fire, to scold it, to spit upon it, to urinate on it. It will not do to cast into the fire rubbish which adheres to the shoes, for that would cause headache. It is sinful to poke the fire with an iron instrument, and the wooden poker with which they do stir it up must be burned every week, or there will be bad luck in the house. A good house-mistress always takes care that the fire may be satisfied with her, and she casts into it a bit of everything which is prepared by its aid. No one ever knows what kind of a fire is burning on the hearth in his house; therefore it is well to conciliate it from time to time, by little gifts. The fire loves, above all, fat, butter, and cream. They sprinkle these often upon it. They told the author, in the northern region, about a people who were said to live on the islands of the Arctic Ocean and who had no knowledge of fire.

[p. 665.] Fire is often presented as a protector and as a symbol of the family and the *sib*. A youth who comes to find a wife dare not pass beyond the strip of light, which falls from the household fire, to go over on the women's side of the house. This would be improper. The same is true for any other person who does not belong to the family. A betrothed man, until he has paid the whole of the bride-price, has no right even to light his pipe at the fire of his affianced; but a wife brought home to the house of her husband, and taking her place in his family ought first of all to go around behind the fire and cast into it a little butter or fat, to put three splinters into it, and to blow them to a blaze. In general women ought not, as far as they can avoid it, to pass over the strip of light in front of the fire-place; their domain is behind it. In the southern districts the cultus of the

fire is dying away year by year; but in the north it is in full force. Besides the domestic fires, there are also wild and wandering fires. If these are lighted by the spirit of the place, when enjoying itself, then they are good fires; but if they are the work of the devil, then it is a bad sign to meet with them. There are also heavenly fires, such as the lightning, which was formerly considered a symbol of *Ai-toyon*, but this notion is undergoing change and cannot now be defined.

Shadows.—The shadow thrown by objects is considered a peculiar, real, and inseparable part of the object. It has some connection with the soul of the object, and also some connection with fire as a spirit. (See note H, p. 108.) In the incantations, phrases are often met with of this kind: "The shadow of the fire." "The fire shadow." "The shadow of the spirit," etc. The *shaman* in one of his rites says: "Cast all thy diseases into the shadow of the fire." It is possible to lose one's shadow. Then misfortune threatens the man. They say: "A man has three shadows; it is possible to lose the first two, although then a man becomes inactive, diseased, and flaccid. When he loses all three, he perishes."

Every object may have at its disposition a soul (*ichchi*), as well as a shadow. All objects which bear traces of human handiwork have souls (*ichchi*). Cliffs, mountains, rivers, and woods have souls (*ichchi*). The wind is also a spirit. It sleeps in the mountains; it is not hard to call it from thence by a whistle. (See note H, p. 108.)

Some of them think that the milky way is a seam in the heavens. The heavenly bodies in general influence the fate of men and the changes of the weather. They foretell the future.

When a man dies it is not permitted to his household to execute any work until after the next new moon. The moon itself has a soul and human attributes. It stole an orphan girl who was tormented by her step-mother, who sent her for water in winter bare-footed. This girl is now in the moon, with a shoulder yoke and pails on her shoulders, and around her grow sand-willows which were stolen at the same time with her. As she grows the moon grows.

Divination.—They have a system of divination as follows. They draw two concentric rings on the table, and mark the north, north-east, east, south-east, south, south-west, and west points on the exterior circle. The northern point is called the chief road; the north-eastern point, being the point of the summer solstice, is the road for getting horned cattle; the east is the road of good luck; the south-east, the winter solstice, is the road for obtaining horses; the south is the chief road; the south-west is the road into the woods, and means death; the west is the dark road of the devils. The diviner sits down at the table, rests his elbows on it, and his forehead on his hands. A string with a weight on the end hangs from his little finger. Having recited an incantation, he waits until the pendulum comes to rest. After a time it begins to quiver and wave, and falls into a line of movement corresponding to one of those in the figure. They are very eager to discern the future, and have a number of methods for it. They divine by the falling of a spoon. A *shaman* does it by the falling of his drumstick. The

girls do it by the falling of a coal. They split a stick and insert in the split a splinter lengthwise, so that it holds the split open. They set fire to the splinter in the middle. When the coal flies off, on account of the pressure of the split stick, then the person finds out whether his wish is to be fulfilled or not.

NOTES BY THE AUTHOR, M. SIEROSHEVSKI, embodied in the Polish edition : *Twelve years in the land of the Yakuts*, Warsaw, 1900, F. Karpinski ; (*Dwanaście lat w kraju Yakutan*, Warszawa, 1900, nakładem F. Karpinskiego.)

A. Selon toute probabilité, les Yacouts menaient autrefois une vie nomade dans la Mongolie et faisaient part des tribus qui dans les premiers temps de notre ère formaient les grands états turaniens nomades, connus aux historiens chinois sous des noms différents : Hun-nu, Goa-giu, Tu-qui, Uj-gur, etc. (Voir l'édition polonaise, page 90.)

B. Dans les *Ulus* du centre, où l'agriculture ne s'est pas encore développée, les conditions sont aussi défavorables à la pêche et les animaux pouvant faire l'objet de chasses fructueuses sont presque totalement exterminés.

C. C'étaient des coutumes très anciennes provenant sans doute du temps, où le *sib* commençait à s'organiser. Pendant les migrations des Yacouts du midi au nord la perte du petit bétail (moutons, chèvres) ainsi que l'amointrissement des troupeaux de bêtes à cornes furent la cause d'une rétrogradation économique, du retour aux troupeaux de chevaux. Les Yacouts jusqu'à l'arrivée des Russes, ne savaient pas sécher le foin et le tasser en meules. Les chevaux du pays n'en ont pas besoin même en hiver. Ils savent trouver leur nourriture en écartant la neige avec leurs sabots. Mais, par contre, ces troupeaux exigent un changement continu de place et donnent une nourriture de qualité inférieure, facilement gâtée et impropre à conserver.

D. Les groupes qui se développaient le mieux étaient ceux, qui pouvaient manger à la fois toute une bête tuée. Leur facilité de mouvement était plus grande, car ils n'avaient pas besoin de traîner avec eux des fardeaux et la nourriture n'était pas exposée à se gâter.

E. Le code moral des Yakouts n'avait pas prévu le meurtre au dedans du *sib*. On doit supposer, que le meurtrier était obligé de quitter le *sib*, la vengeance cessait en cas de paix conclue entre les *sibs* avec paiement du *wergeld*.

F. Chez les Yakouts nous trouvons un groupe familial encore bien mal connu par les savants : on le nomme *ye-ussa* (*ye* = mère, *ussa* = *sib*). Maintenant c'est la dénomination du groupe déduit de la ligne mâle et qui a quelque ressemblance avec la *familia* romaine. Autrefois il semble, que *ye-ussa* était le nom général donné à tous les descendants d'une même femme. (Voir l'édition polonaise, pag. 293.)

G. Les Yakouts emploient l'os du péroné comme symbole de la concorde, de la vénération et de la paix pendant la célébration des mariages, pendant les meetings du *sib* et les pratiques des *shamanes*. "Partageons entre nous les os des animaux comme la *vodka* (= l'eau-de-vie)" disent-ils. Des os semblables ne doivent pas être cassés. Celui qui l'a reçu, le casse lui-même et en mange la graisse. (Voir l'édition polonaise, pag. 242.)

H. Mais l'âme élémentaire de l'objet en général (*ichchi*), qui, à ce qu'il semble, exprime tout simplement son action d'exister, diffère de l'âme des objets vivants (*sur*). La vie commence où commence la respiration (*ty*). Les objets vivants auraient donc comme une double âme ; (1) l'existence (*ichchi*) et "le mouvement" (*sur*) ; les animaux morts ou souvent malades perdent leur *sur* et conservent seulement leur *ichchi* qui disparaît aussi en cas de mort. L'homme et parmi les animaux le cheval seul ont une âme triple : le *ichchi*, le *sur* et le "*kut*." La *kut* humaine est petite, pas plus grande qu'un petit morceau de charbon. Quelquefois le chamane évoque de par-dessous la terre dans la partie gauche (féminine) de la maison la *kut* des malades. Elle s'agite posée sur la main et est très lourde. La *kut* abandonne quelquefois l'homme pendant son sommeil et erre au loin. Si par hasard il lui arrive malheur pendant son voyage, son propriétaire tombe malade. La *kut* est comme l'image indecise, comme l'ombre. Comme l'ombre a 3 parties : une grande et pâle, une petite et plus foncée et le centre tout sombre, ainsi l'homme possède 3 âmes. Quand il en perd une il souffre de malaise, deux il est malade, trois il meurt. (Voir l'édition polonaise, pag. 382.)

ADDITIONAL NOTE BY W. G. SUMNER.

The passage on terms of relationship and address having been entirely re-written in the Polish edition, a literal translation is here appended.

The most primitive and strictly defined term of relationship is *ie*, "mother," the exact sense of which is, "case," "matrix," "place of birth." The term for "father," *aga*, is not so distinct. It means "an elderly man," *i.e.*, an adult. When a Yakut wants to know whether a certain person, without regard to sex, was born before or after himself, he asks whether that person is *aga* or *balys* (French, *ainé* or *puîné*). The term for "child," *ogo*, is entirely indefinite. Its sense is "young one." It is employed for the young of beasts, birds, and even trees (sprigs, sprouts, offshoots). *Ogom*, "my child," which is formed by adding the possessive pronoun *m*, does not imply at all that the person addressed was procreated by the speaker. It is addressed equally to grandson, son, or even younger brother. In the current vernacular, older persons use *ogom* in addressing younger persons without regard to blood relationship. "The ancient Yakuts, even when very angry, did not address young persons otherwise than 'my child.'" *Uol*, "lad," and *kys*, "maid," express primarily "male" and "female," but they are used nowadays, with the possessive *m*, for "son" and "daughter." The Yakuts have no special terms for son and daughter. Nor have they any term to express "husband," since *erim* (*er* man, and *im* the possessive) means properly "my man." For "wife" they always say, in the current speech, "my woman," or "my old woman," although they have a special term, *ojoeh*, for "wife." From all this we may infer that when, amongst the ancient Yakuts, a number of related persons were living together, the relations of "mother" and "wife" were the first ones which called for expression, "mother" meaning a woman who had children. This inference would support the belief that the matriarchate once existed among the Yakuts. The children belonged to the whole horde. Any one of the adult men might be the father of a certain child since the sex relations were undefined and perhaps unregulated. It is a curious circumstance that the heroes in the ancient folk tales often set out to find their *fathers*. We see, further, that the terms of relationship amongst the Yakuts express, first of all, the distinction between *younger* and *older* than the speaker. There is one word for older brother and another for younger brother; one word for older sister and another for younger sister, but there is no general term for brother or sister, since all were brothers and sisters within the compass of a *sib*. Hence nowadays *ubaj* means not only "older brother" but also "older male cousin," "older nephew,"—in short "older member of the *sib*" than the speaker. *Ini* expresses not only "younger brother," but also "younger male cousin," "younger nephew," and in general "younger member of the *sib*." The case was the same as to female relations. In current speech, especially in personal address, the Yakuts use no other terms than these. Yet the proper terms exist, for the Yakuts have a nomenclature of relationship

which is even very rich and complicated. For some degrees they have two names, one used by males, the other by females—a feature of what Morgan calls the Turanian system. Thus: the younger brother whom males call *ini*, females call *surus* or *surdzja*; the wife of a younger brother is called by his brothers *kinit*, but by their wives *badzja*; similarly younger brothers and their wives have different names for the wife of the former's elder brother. This shows that the jural relations between these classes of persons were once different from what they are now, since we find that terms of relationship are indications of jural relations. The last mentioned terms of relationship have now lost their special signification. It would be too bold to build inferences on these terms only, since there is no tradition of any conjugal relation between brothers and sisters, and since special terms for father and husband are not lacking. It is a noteworthy detail that the older sisters and female cousins of one's father bear the same name, *sangas*, as the wives of one's older brothers; and that the older brothers of one's father bear the same name as the father of one's mother and his older brothers, *obaga*. Consequently the (older) sisters of one's father together with the wives of one's (older) brothers form one group, but one's paternal uncles (older than one's father), and one's mother's paternal uncles form another. The division into such groups is characteristic of the narrower man family, and the confusion of sisters and wives, maternal great uncles and paternal uncles in one concept is a proof of the relation of affinity between those groups. Therefore before the Yakuts went over to the man family based on pair marriage or polygamy, they practised, for a time, group marriage of sisters and brothers allotted according to age strata.

[In an Appendix to the Polish version the author gives a list of Yakut terms of relationship with definitions.]

CEPHALOMETRIC INSTRUMENTS AND CEPHALOGRAMS.

BY J. GRAY B.Sc.

[PRESENTED MARCH 12TH, 1901. WITH PLATES VI, VII, VIII.]

IN most countries on the continent of Europe, the collection of statistics of the physical characteristics of the population is greatly facilitated by the conscription; and this, to a great extent, accounts for the fact that our neighbours are so far ahead of us in the ethnographical survey of the people. In this country we have to make use of less efficient means; since we cannot bring the people to us, we must go to the people.

I have found it a very good plan to attend some assembly composed of natives of the district, such as a meeting for sports, or a fair. In order to get a satisfactory sample of the people of a district, it is necessary to measure at least from 100 to 200. The time available for doing this at such meetings is usually not more than three or four hours, and measurements have therefore to be very rapidly performed. The head measurements should preferably all be performed by one person, and the only measurements possible, if one is to measure large numbers, are measurements of the length and breadth of the head. The callipers used must be such as to require the minimum time for adjustment.

CALLIPERS.

A callipers (Plate VI) which I have designed for this purpose is constructed on the sliding principle. Callipers on this principle have the advantage over the compass callipers, that the readings from the scale are more accurate, because the scale is larger, and also lies parallel to the line to be measured. In the compass callipers, the scale lies nearer the pivot of the callipers than the measuring points, and divisions of the scale must necessarily be smaller than the standard size. Another objection to this kind of callipers is that the scale is an arc of a circle, while the line to be measured is a chord, and equal divisions on an arc cannot possibly be used to measure a chord.

There is, however, a great objection to the sliding callipers as usually constructed. It will not, like the compass callipers, open automatically when pressed on the head, and this property is most essential for the rapid measurement necessary in field anthropology.

My object was to design a sliding callipers that would open automatically, and thus combine the advantages of both types. A little mathematical calculation will show that this can be done if the slide to which the movable leg of the callipers is attached is made greater than a certain minimum length.¹ This minimum possible length is still further reduced when friction rollers are used, as in the instrument shown (Plate VI).

Instead of using a slide fitting everywhere closely to the beam of the callipers, only two pins with friction rollers are used. Since the strain coming on the leg of the callipers always tends to produce rotation in one direction, two pins at the extreme ends of the slide are all that is necessary to take the thrust. This reduces the cost of construction and prevents any jamming due to bad fitting.

The friction of the bearings of the slide having been reduced to a minimum, it is necessary to introduce an artificial resistance to the movement of the slide which can be regulated in amount. A callipers which is suited for measuring a skull or other rigid body is not necessarily the best suited for measuring the living head, which, owing to the presence of the skin, is elastic; resembling, say, an india-rubber ball. To get uniform measurements of the diameter of an india-rubber ball with the same or different instruments, it is necessary that the points of the callipers should always press on the ball with some pressure. This I have endeavoured to secure by fitting on the slide a brake whose friction can be adjusted by a screw.

To standardise the callipers it is placed on a standard bar; the index line on the slide is then set on the scale to the length of the standard bar, by slackening the screws by which it is clamped to the slide. Then the pressure on the brake is adjusted till the force required to separate the points of the callipers is equal to the required amount,² a spring balance being used to measure the force.

Friction rollers are mounted at the points of the callipers to make the operation of measuring more pleasant for the person operated upon.

To measure the length of the head, the fixed point of the callipers is placed on the glabella, and the other end of the beam is pressed down. The movable limb of the callipers will then be opened automatically by the pressure of the back of the head till the maximum length is reached, when the callipers is removed from the head and the reading taken.

I have had a callipers made in which the limbs are pressed together by a spring, but this is not so satisfactory as the brake, because the reading must be taken when the callipers is on the head, and the slightest movement causes a variation of the reading.

¹ If x is the distance between the contact points of the slide along the centre line, a is the perpendicular distance from the centre line of the slide to the point of the leg, and f is the coefficient of friction of the contact points; x must be greater than $2fa$ to ensure automatic opening.

² I have found that a convenient pressure is 14 oz. or 400 grammes.

CEPHALOGRAPHS.

It has been proposed by several anthropologists to take diagrams of the whole contour of the head instead of merely measuring the length and breadth. Sergi has strongly advocated this method; he points out that the maximum breadth which is measured by the callipers may be at very different distances from the terminals of the maximum length in two heads of different contour, so that the same measurements by the callipers might be obtained on two heads of very different type.

Many instruments have been designed with the view of obtaining these diagrams. They do not appear, however, to be in general use. I have here two instruments which I have designed for this purpose. There are several details in which I can see they require improvement, but I have found that they work fairly well.

The first instrument (Plate VII) is constructed on the principle of the pitch chain. The pins or pivots of a pitch chain such as the driving chain of a bicycle always remain parallel to each other, however the shape of the chain may vary. These pivots are prolonged on one side of the chain in the instrument, so that when placed on a head they lie in contact with it; at the other ends they are pointed. The pins are pressed in contact with the head by spiral springs wound on the pins between the links of the chain. The diagram is obtained by pressing a sheet of paper on the pointed upper ends of the pins. The objections to this instrument are that it is inconvenient to handle, and the operation of taking a diagram is somewhat unpleasant for the person being operated upon.

To get over some of these objections, I have devised another instrument (Plate VIII), in which contact plates are pressed against the head by radial pistons actuated by compressed air. Fig. 1 is a sectional elevation and Fig. 2 is a half plan.

The framework of the apparatus is a ring, *A*, of aluminium alloy (such as Bowenite) which can be cast. In this ring are bored 48 radial holes, *B*, all of which on each half of the ring communicate with a channel, *C*, in the periphery of the ring. This channel is closed so as to form a tube, by shrinking on a ring, *D*, of the aluminium alloy on the turned periphery of the main ring. If the aluminium alloy is not strong enough to stand the shrinkage, brass may be used. In each of the radial holes is fitted a piston, *E*, with double cupped leather packing, which must work with very little friction, and yet be quite air-tight. I have made packing out of old kid gloves which is perfectly satisfactory. The leather is soaked in water for a day and then pressed into a cup mould.

The piston rods, *F*, are thin plates of brass lying in the vertical diameter of the cylinder, and kept vertical by a notched ring, *G*, covering half the mouth of the cylinders. The section of this ring is L shaped, and it is recessed and fastened by screws on to the main ring. Rivetted to the ends of the piston rods are vertical plates, some shaped like the legs of callipers, *H*, and some like combs, *I*,

which press against the head when the pistons are forced forward simultaneously by air pressure.¹ At the upper end of each plate is a sharp point, *J*, lying in the same vertical line as the point of contact with the head. This is to enable a sheet of paper to be pressed on the points, to receive a projection of the outline of the head. The sheet of paper is placed on a cork board, *K*, which is hinged at one end to the main ring. The hinge is fitted with a spring, *L*, which causes the board with the paper to turn down on the points when a spring latch, *M*, has been released.

A self-centring device is fitted to bring the centre of the main ring always over the centre of the head. For centring sideways two bell crank levers, *N*, are used geared together by toothed segments, *O*, and pressed against the sides of the head by springs (omitted in the drawing). For centring lengthways two inclined planes, *P*, fixed to a ring, *Q*, running round the periphery of the main ring, are used. These inclined planes act on studs, *R*, on the two extreme pistons which pass through slots underneath the cylinder. These two end cylinders are cut off from the air pressure applied to the other cylinders.

The two end pistons are pulled outwards by spiral springs, *S*, and are pushed inwards by the inclined planes. The ring of the inclined planes will have a few plain studs, *T*, for turning it, these being forced up to the fixed studs, *U*. After each operation the inclined planes are retracted by two springs, *V*.

CEPHALOGRAMS.

Instruments such as have been described for obtaining the contour of the head, have been called cephalographs; the diagrams may be called cephalograms by those who have no objection to an addition to our already extensive scientific terminology.

I have shown in the illustration (fig. 1) a few of the diagrams I have obtained with these instruments, all being from living heads. The persons have been taken at random, and I have no means of ascertaining whether they are typical specimens of their people or district.

The results, however, show a considerable resemblance between persons of the same people and *habitat*. The three Parsees are about exactly alike and are very different from the Brahmin. Persons from the same districts of England and Scotland appear to resemble each other more than they do persons from different districts.

I think these cephalograms promise to furnish us with a powerful means of analysing people into their racial elements. The callipers, however, is likely to remain the principal instrument for the preliminary work of an ethnographical survey.

¹ The calliper legs are used on the forehead and at the back of the head, and the combs are used at the sides of the head, the object being to get a diagram whose length and breadth shall be equal to those measured by the ordinary callipers.

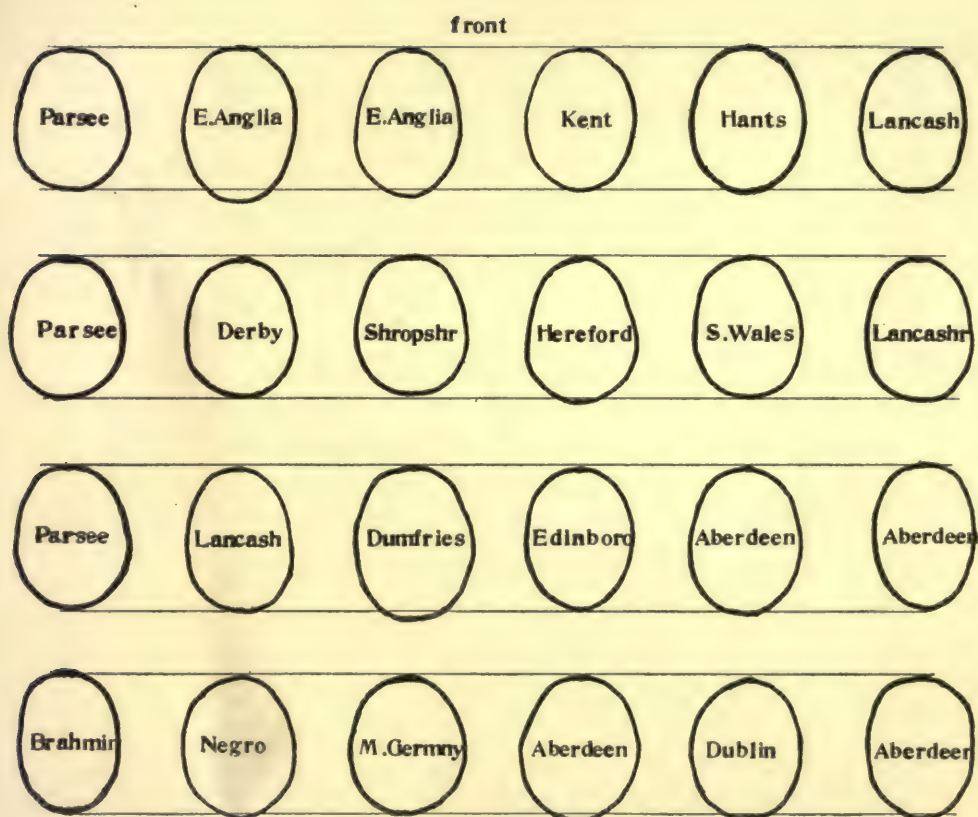
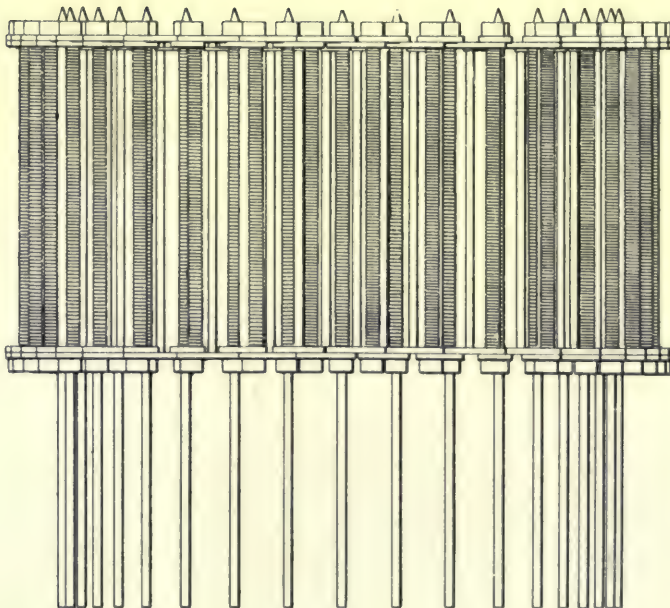
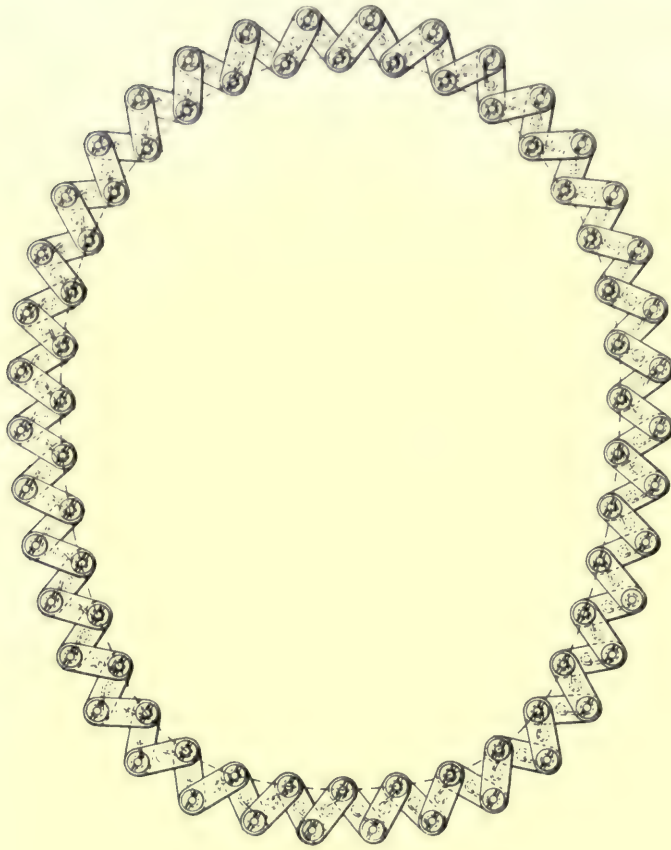
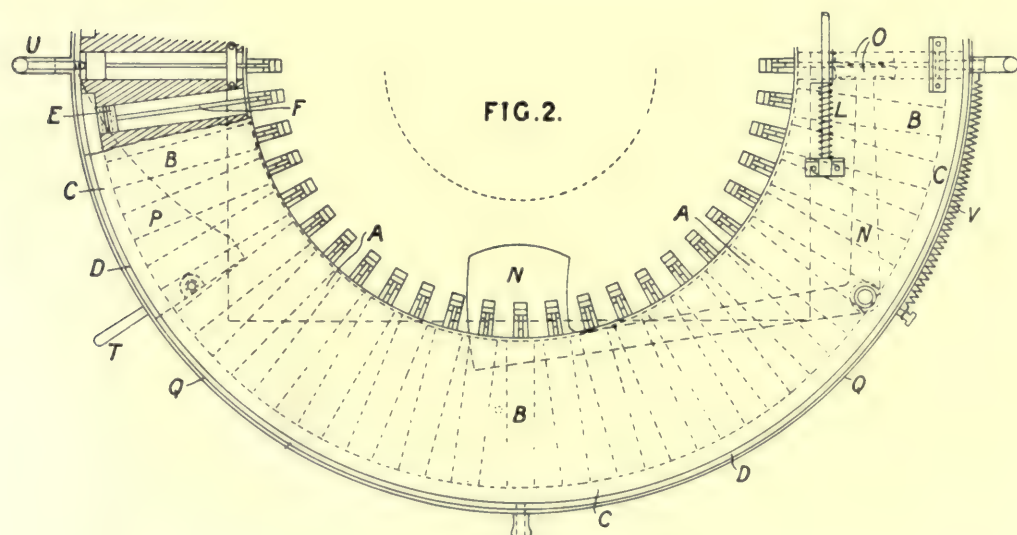
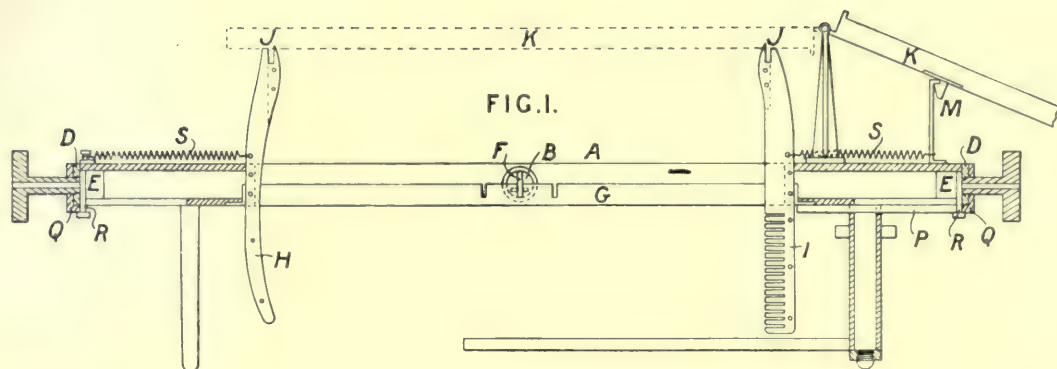


FIG. 1.





NOTES ON THE MANNERS AND CUSTOMS OF THE BAGANDA.

BY THE REV. JOHN ROSCOE.

[COMMUNICATED BY J. G. FRAZER, 23RD APRIL, 1901.]

THE Reverend John Roscoe is an energetic member of the Church Missionary Society who for many years has laboured in Uganda. Despite ill-health and overwork he has made time to write out the following answers to the list of questions issued by Dr. J. G. Frazer (cf. *Journal Anthropological Institute*, xviii, 431).

We trust that we are not committing any breach of faith in printing the following interesting extracts from his letters to Dr. Frazer.

On the 10th December, 1899, Mr. Roscoe wrote:—"Had the work been done twelve years earlier it would have been much easier; we should have been able to get old people who would have given reasons for some of the customs; now I may question twenty people without gaining the point I require."

"Just before leaving Toro, I heard there are some men who say they have the labour pains for their wives. I was asking about the midwifery customs, and this was told me. The men are said to have all the pains, whilst the women go on with their regular duties, perfectly happy until the time of delivery. The relatives too go to the men and ask for the child."

"All I have just written [January 8th, 1900] on the matter of the spirits is quite new to me. I was told they had no such customs, and it was quite accidentally I found a little bit of information which has thrown a flood of light on some of them. All burial customs are closely connected with their ideas of the spirits, and if a corpse is not decently interred the spirit will haunt the relatives and bring sickness or calamity upon the house. Even the people I think I can trust often mislead me through carelessness, or allow some important thing to pass over and thus give wrong impressions. It is strange how the women were ignored in all the old customs; they did not take part in any of the ceremonies, and only in the case of an aunt does the spirit seem to be feared."

"For a month past [April 27th, 1900] I have been unable to get any assistance with the verifying of my notes, owing to all the chiefs being so busy framing new laws. The British Government has just introduced quite a new system of governing the country and abolished the Baganda system and laws.

This has taken up all of the time of my helpers and also their thoughts for a time. It was well you put me up to making notes of the old customs before all this came in and thus gave me a little time to get the main facts down. Now all of what was so very interesting is being swept away at one stroke by the Government, in the name of civilisation. It is creating a good deal of ill-feeling amongst the people, especially the peasants, who do not understand what to expect next. If only our Government had been able to go just a little more quietly, they would have gained their end without creating all the ill-feeling there now is."

"Some of the questions I do not answer as they do not apply to the Baganda, and some I can only partially answer because the men I ask either do not know or are not agreed. It is most remarkable how soon they forget their old customs, and how little they know of the reasons for the things they do."

1. *Tribes and Clans.*

<i>Kibe</i> , or fox.	<i>Enkeje</i> , small fish ; sprats.
<i>Nkima</i> , monkey.	<i>Fumbe</i> .
<i>Mamba</i> , a large fish.	<i>Ngonge</i> .
<i>Nsinene</i> , a small green locust.	<i>Namungona</i> , crows.
<i>Lugavwe</i> , kind of lizard.	<i>Nyama</i> , meat.
<i>Ngeye</i> , squirrel.	<i>Kasimba</i> , small wild cat.
<i>Musu</i> , a large rat.	<i>Nkebuka</i> .
<i>Mpindi</i> , beans like dwarf beans.	<i>Ntonyeza</i> , rain drops from the roof.
<i>Endiga</i> , sheep.	<i>Ntalagangya</i> , zebra.
<i>Nkobe</i> , a monkey.	<i>Ngo</i> , leopard.
<i>Mbogo</i> , buffalo.	<i>Ndegea</i> , kind of tailor bird.
<i>Njovu</i> , elephant.	<i>Mpisi</i> , hyena.
<i>Mpeo</i> , gazelle.	<i>Nkenda</i> .
<i>Ngabi</i> , antelope.	<i>Mvuma</i> .
<i>Nyonyi</i> , birds.	<i>Embwa</i> , dogs.
<i>Butiko</i> , a small mushroom.	<i>Nyange</i> , kind of white water bird.
<i>Mvubu</i> , hippopotamus.	

2. There is no distinctive dress, but the children are named by names peculiar to the clan to which they belong.

3. The names may be of animals as *Mbizi*, the pig, or of natural objects as *Msoke*, a rainbow, or after one of the deities as *Mukasa*, god of the lake, or for some peculiarity, *Lubutokyoto*, literally hot stomach or *Musenzalanda*, the slave who sits by the door and gradually works his way into the family.

4. The totem, or *muziro* as it is called by the Baganda, is not regarded by them as sacred, but may not be killed or eaten by any of the clan, though other clans may do so with impunity. They do not freely speak of their *muziro*, nor will they tell you what it is, but refer you to someone else to do so.

5. They believe anyone eating or killing their totem will either die or fall ill or have sores break out all over his body.

The only origin they have of the totems is that one of their forefathers partook of that animal or bird, etc., and fell ill, and from that time it was looked upon as injurious to them, and they took it as their totem.

Birth, Descent, Adoption.

7. During pregnancy a woman is not allowed to eat salt or hot food, but periodically she is given a special kind of salt which acts as a mild aperient. A few days before she is confined she is secluded and daily rubbed with oil to make all the parts soft and supple. If she is delivered during the day she is taken out into an enclosure at the back of the house and stripped. She then holds on to a post in the ground which is firmly planted for the purpose and is delivered stooping, from behind. If she is confined during the night it takes place in the house.

In the case of a chief who has many wives he does not cohabit with one who is nursing a baby.

9. The husband is free from any ceremony.

Baptism.

10. When a child or children are to be baptised, two or more families may join in the ceremony. The children may be baptised at any time between the ages of two and eight years old. The ceremony takes place in one of the houses of one of the parties whose child is to be baptised, and in the presence of a goodly gathering of the relatives. A feast is given according to the position and wealth of those concerned; if poor only a fowl will be cooked, but if wealthy an ox or goats will be cooked. The mothers of those to be baptised would have a girdle of plantain fibre to distinguish them from the other women present. The children are brought out of the house and sit on mats in front of the people. The food is then served and the guests and relatives partake, the latter eating theirs in the house. The mothers, however, are not allowed to partake until after the children have been proved to be legitimate. This is done as follows:—each mother at birth preserves the umbilical cord until after baptism; this is now produced well greased, a bowl containing a mixture of milk, beer, and water is brought, and the cord is dropped into it; if it floats the child is legitimate, but if it sinks the child is said to be illegitimate. This process is watched with great interest, and when it is seen to float a cry of "Eh! Eh!" is uttered by all in a shrill tone, and the grandfather then goes through the genealogy of the child, mentioning the male relatives for some generations back. If, however, the child is proved to be illegitimate, the mother is dragged out and severely flogged. A strong girl, a relative of one of those to be baptised, is now brought out and one child is placed on her back; it clings there by its legs round her and its arms passed under her arms and on to her shoulders; a second child is placed on the back of the first, and if there is a

third, that is placed on the back of the second. When thus arranged the bowl with the mixture is brought out and poured over their heads by the grandfather. The baptism over, they can resume their seats. The mothers now sit on a mat with their legs straight before them, and the grandfather takes a piece of the food in a banana leaf in his right hand and a piece of fish in the left hand, and rests his hands on the woman's feet, then goes through the child's genealogy, beginning with his own name, not the father's, and moves the food up nearer and nearer the woman's mouth as he mentions each name until he ends by putting it to her lips. The woman then takes a little of each and is allowed to eat her meal. All the food that is left is divided among the children. Next morning the children are named by their grandfathers. The custom of royalty is to choose for the first-born the name of the great-grandfather, but the peasants may choose any name of a relative. The spirit of the person after whom the child is named is supposed to enter into the child, and according to the prowess of the ancestor so will be the bravery of the child. The children then have their heads shaved and the ceremony is ended.

12. Should the first child born to a chief or a king be a boy it is killed at the birth because it is said to be the heir, and the father will surely die if it is left alive. The father is not told of the sex of the child but simply that it was a still-born one; this saves the wife from any ill-feeling from her husband, who might accuse her of wanting a child to succeed him.

Children born feet first are also killed, as they are said to be the cause of death and the parents will die if they are allowed to live. The bodies of those thus killed are buried in one of the thoroughfares, as are the bodies of witches and outcasts.

13. A child always takes the *muziro* of the father and is reckoned as one of his clan.

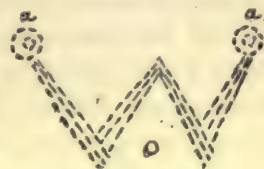
14. Adoption is practised, but there is no ceremony. The child is usually sent secretly to the people who adopt it. The reason for this practice was to save the children in case the father did anything wrong and displeased the king, who would at once send and capture the man with his wives and all his children and put them to death. The girls were as a rule taken to be slaves or wives of the king or to whom he chose to give them. The above rule, therefore, applied only to boys. The friend who adopted the child brought it up as his own, but in case he fell into disgrace the child was claimed by the parents and thus saved.

Skin markings.

18. The only marks or tatuing the Baganda have are what they call *njola*. There is among them no filing or cutting of the teeth, but on the shores of the lake near the Buvumu Islands there are a few women who pierce the lower lip. These are said to be more Bavumu than Baganda.

19. Many of the women have on their stomachs a large W-shaped figure; it extends from each breast to the pit of the stomach, and the point comes to the

centre of the chest. None of the king's wives were allowed to have *njola*, because the women who could bear the pain were said to be capable of killing him. The tatuing was performed by one of the native doctors, who received a small fee which the husband paid. When the woman was well she brought her husband a fowl. The *njola* is said to have been done to please the husband, who could feel it on his body when he had connection with his wife.



TATU-MARKS OF BAGANDA
WOMEN.

a. a. represent the breasts.

21. Only women are tatued among the Baganda.
22. It is only performed for beauty and that only by the married women. No princess nor wife of the king or of the Nsenene clan may be tatued.

Women.

23. Girls not yet married have a feast, and are not allowed to walk until they are well. Married girls have a present of a bark-cloth and a feast. There is no other ceremony such as that among the Wamegi near the coast, where the girls are deflowered by certain old women.

24. They are not secluded but may not come near a man or touch anything of his or sit on his bed or mat.

25. No woman is secluded during the time of menstruation, but is not allowed to touch anything belonging to her husband or even cook for him until perfectly recovered. If she touches anything of his he will surely fall ill, or if it is his weapons he will surely be killed in the next battle.

26. Menstruation is supposed to be caused by the moon either when new or waning. A woman who does not menstruate is said to be one who kills her husband, and if he goes to war he first spears her sufficiently to draw blood to ensure a safe return.

27. A man is forbidden to marry a woman belonging to the same clan as himself except in the case of the Mamba clan and one or two other very large clans.

28. No man was allowed to have sexual intercourse with any woman of the same clan; the infringement of the custom was punishable by death. All women of the same clan as a man are regarded as his sisters.

29. In a case of the breach of the custom the man would be sure to fall ill or if married his children would fall ill and the guilt become known and then punishment would follow.

30. A man may not marry into the clans of either of his parents, with the exception of the Mamba clan, and in that no nearer relatives than second cousins may intermarry.

31. Polygamy has for many years been universal; in the early days of the Baganda it is stated a man was only allowed one wife, then two were allowed, and later a third. For years no more were allowed until the people became lax with regard to the old customs, and introduced reasons for the increase of wives until it

was regarded as a sign of great wealth to have many women or wives. But even then three women were always chosen out to be the true wives of the chief or king, and all the others were regarded as their assistants.

32. Princesses, who were never allowed to marry, but were regarded as the king's wives, constantly committed adultery, but if found out were put to death. However one princess, who was given the title of Lubuga ("king sister") and was looked upon as a king, or as we should say queen, took as many men as she liked, and though she was not officially allowed to marry it was commonly said that all Baganda was her husband. The dowager queen also did the same thing, but these were the only two whom the king and people allowed to have more than one husband.

33. Polygamy was the outcome of wealth; a man might not be able to conceal cattle but he could get women and hide them away and not excite the envy of the king or chief. A chief feared the king and therefore instead of collecting numbers of cattle he bought women.

34. In the case of a chief a messenger is sent and sounds the parents to see if they are agreeable to the match; if they consent then the girl is asked. In some cases the girl is first consulted, but this is not the usual form. If both parties agree a quantity of beer is sent to the parents as a token of the betrothal, and later the marriage dowry is discussed, and the amount settled by the parents and the relatives. The beer is a most important part in the betrothal and legalises it; in after years if any dispute arises and the legality of the marriage is questioned it is always sufficient to say beer was given and accepted.

Peasants often obtained wives from their masters as tokens of favour, or as a gift for service. Not infrequently they got them by capture during war.

35. The usual custom is for each man to have his own house and take his wife there at once. Few women care to marry a man who has no house and garden, the latter being looked upon as the woman's right, and in fact being the chief cause for a man marrying that he should get food well cooked.

36. The bride is the only one to make any preparations for marriage; she is for six days well oiled all over. The oil is rubbed in to make the skin soft and smooth. On the day of the marriage and the following day the bride does not eat much food but does not fast.

37. When the dowry has been paid and the relatives are satisfied the friends of the bride gather at the parents' house and those of the bridegroom at his house, and after dark, about eight o'clock at night, the bride is carried off to her husband. She is bedecked with beads, bracelets, anklets, etc., many of them being borrowed from her friends for the occasion. When half-way the party is met by a deputation from the husband, his sister being his representative, the other party stop and the bride's brother comes forward and takes the bride by the right hand, and gives her over to the bridegroom's sister. Presents are then given to the bride's party according to their rank, and they return home, leaving her to be taken on by the bridegroom's party. One girl accompanies the bride who is called

the Mperekezi ; she remains three days and then returns home. When the bride reaches the door of the house in which her husband is, she refuses to enter it until she receives a few cowrie shells ; she then enters the room but will not sit until she receives another five or six cowries. Food is next served, but the bride will not eat until five more cowries are given her by her husband. The cowrie shells are a token of his love to her, and if he refuse to give them she is free to return home. There is no promise made by the husband that day, though the sister has made a promise to the bride's brother that his sister will be well treated and proper care taken of her.

38. The bride is veiled when she goes to her husband and continues to wear the veil for a month after marriage. There appears to be no ceremony either when she is veiled or unveiled.

40. The little girl who accompanies the bride may be regarded as a bridesmaid. She remains with the bride for four days and seldom goes out of her presence, and during the time she remains the husband and wife sleep in separate parts of the house, as the Mperekezi sleeps with the bride. The object of the girl's presence is said to be to prove the bride is not a slave who has no one to care for her or defend her rights. At the end of four days the Mperekezi returns home taking with her all the armlets, anklets, necklets, etc., and is given a present of 100 shells. When she leaves the place she goes out as the bride, returning to her old home, and is welcomed by the relatives as the bride who left them. At the end of a month or sometimes two months the bridegroom chooses four men, who come to his house, and he promises in their presence, and before his wife, to care for her and treat her with all due consideration. These men are then regarded by both parties as the guardians of the marriage rights, and if there is in the future any unpleasantness, or if either wrongs the other, or if the wife commits adultery, they are called in to settle the matter, and if possible to reconcile them. After the promises are made there is a second marriage feast and the wife takes her place as the mistress of the house.

In the case of peasants the bride only remains in seclusion from two to four days. Her relatives then bring her presents of food and fowls, etc. She cooks these and they have a feast in honour of her coming out of her seclusion. She afterwards goes about her regular duties.

42. The man may not cohabit with his wife during the time the Mperekezi is present, that is for four days.

44. No one but the husband was ever allowed to deflower a girl ; and girls were carefully guarded lest any one should do so. There was an old custom of sending to the parents a present of meat wrapped up in the bark-cloth with the blood from the girl which had flowed during her first connection with her husband. The meat and bark-cloth were a token she had remained pure to the time her husband took her. The girl was given the remainder of the meat from the animal killed in honour of the event, and was also given a bark-cloth.

45. The only time they abstain from their wives is during the menstruation,

and if a man has a good number of wives he will also do so during pregnancy and whilst she is nursing; during the time of mourning it is customary to abstain from sexual intercourse.

46. For a time during the reign of Mutesa, wives were exchanged among the greater chiefs, and they also sent them to the king, but this appears to have been introduced by Arabs.

46A. The widows of a chief were divided up into four lots:—

1. Those to guard the tomb.
2. Those the heir took.
3. Those who were given to the king.
4. Those who were given to the clan.

Those for guarding the tomb were the ones who had borne children to the deceased. Those for the king were the pick of the virgins who had never known a man. The heir then took his pick of those who were left. In his case those chosen were at liberty to refuse him if they liked; in such a case the relatives had to refund the dowry which had been given.

There was a custom for all the widows after the funeral to gather together in the house, and the centre post was taken out and put into the fire and all round it sat there warming themselves. Those who had relatives were then taken from the fire by those who claimed to be relatives, and those who were left were slaves because there was no one who claimed them. If a relative on those occasions was left at the fire she could not afterwards be reclaimed; she was for ever a slave. The taking down and burning the main post was to show the owner was dead and the house broken up, and the widows sat there in sorrow, being left desolate until reclaimed by their relatives.

47. No man may see his mother-in-law, or speak to her face to face. If he wants to have any communication with her it must be done by a third person or through a wall or closed door. If he breaks this rule he will be sure to be seized with shaking of the hands and general debility.

They may not see or speak to one another, because of the relations in which they stand to the wife; it is said to be like looking upon the mother's nakedness.

The woman may speak to her father-in-law, but may not take his hand or touch him or even hand him anything.

48. Brothers and sisters may speak to one another; there is no restriction whatever on their intercourse.

Disease and death.

Death is attributed to Walumbe, a spirit which came from Katonda (God) when Kintu the father of the Baganda and their great ancestor came from heaven. They say when Kintu first came to the earth Katonda gave him a parting feast and then commanded him to go to the earth and inhabit it. He gave him one of each thing he was likely to require, a cow, a goat, sheep, fowl, a plantain, grain of maize, etc. His parting word was to start in the morning early and by no means

to let his brother Walumbe know he was going, and if he forgot anything he was not to return for it. Next morning Kintu and his wife Nambi Natutululu set off to the earth, and as they were descending Nambi remembered she had forgotten the bulo (a small grain, the food for the fowl). She told her husband, but he refused to give her permission to return and reminded her of the parting word of their father. She however would not listen to Kintu, but ran back and snatched up the grain which was at the door of the house, but as she was hurrying back to rejoin her husband Walumbe met her and asked, "Where are you going, my sister, so early, and leaving me behind?" Her efforts to shake him off were in vain, and she had to go on to her husband Kintu with Walumbe. Kintu was very angry and rated her soundly, but the mischief was done and Walumbe went with them. In the process of time when they had children Walumbe killed them, and Kintu then tried to catch him and put him to death, but he fled to a deep ravine in which is a cave and remained there to the present time. The place is called Ntanda; it is in the province of Singo. To the present day if a person dies from any complaint not understood they say he died of Lumbe.

50. As disease is caused by witchcraft or from the direct influence of some spirit the Mandwa (priest) is called in to divine the cause and tell the people. If he says the disease is caused by some evil-disposed person then that person is caught and fined or in some cases killed. If it is the influence of an evil spirit then they have to try to propitiate the spirit, a goat if it is a chief, or a fowl if it is a poor person, or if too poor for this then a goat skin or a fowl's feather may be employed. The person if possessed may thus be freed; but if the spirit is not thus expelled then they get some kind of herbs which smell very strongly and burn these in the house, and the spirit (which cannot bear the smoke) is driven away. Women seem to be the ones who are mostly spirit-possessed. Men may be made ill by some spirit or the children killed either at birth or soon after; in such a case it may be the man has not interred some relative in a becoming manner, and the spirit is haunting him for this cause; or if it is his children who are being killed then it is his aunt who has some grudge against him.

51. These spirits do not possess the people, but take up their abode in the huts at the top of the centre-pole, and from there they do all the mischief. The Mandwa is in this case called in to tell the cause, and he first finds the abode of the spirit and commands an offering to be made to it; either a goat or a fowl according to the rank of the individuals; these are kept alive and are never allowed to be killed or sold, and if they die they must be replaced at once. In case the spirit is not then satisfied a second Mandwa, of greater skill than the first, is called in, and he says the spirit must be caught. To do this he brings a horn either of a cow or of a buffalo, and in it he places a cowrie shell and either a snail shell or a seed of the wild plantain in the small end, and puts the horn on a long stick and raises it up the post. During the whole process the house has to be in darkness and only a few people in the room. When the Mandwa has reached the top of the pole with

the horn he shakes it about until the friction of the shells inside make a squeaking noise. This he declares to be the spirit in the horn, and it is quickly lowered and a piece of bark-cloth thrown over it, and the horn put in a water pot or gourd and carried off to the river, wherein it is thrown, and the troublesome spirit drowned, or it is taken to the forest and thrown there and left bottled up, to be burned next time the grass fires take place.

52. There are other methods of curing sickness, however; in case of a chief who has some evil attached to him he may be advised to bring a cow which is killed near the house, and the blood is caught and some of it is sprinkled on the door posts, and a stout stick on to which some grass is fastened is also besprinkled and placed across the doorway; the sick man who has been brought out to witness this is then besprinkled on the forehead and on either shoulder and on his legs below the knees. When he is besprinkled he has to jump over the stick in the doorway, and as he does so he lets his bark-cloth fall off; he must not look behind him at all but go straight on. The Mandwa then takes up the meat and the bark-cloth and goes the opposite way, never looking behind. The meat he eats with his friends in the open space before the chief's house. The evil is then atoned for and clings to the bark-cloth. In other cases he is taken into the garden after the door-posts have been sprinkled, and the Mandwa takes a plantain stem some six feet long and makes a long cut down it, and opens it wide enough for the man to pass through it. As he passes he leaves behind his bark-cloth and walks straight on into the house. The Mandwa then takes the plantain stem and carries it into the road and throws it there. The meat of the animal, cow, or goat, he takes and eats in the open space before the house. In the case of peasants who cannot afford a goat for the blood, they make a mixture of wood ashes and water with which the door-posts and the man are sprinkled. When the person recovers it is customary to give a goat or fowl to be kept alive as the property of the spirit.

54. The ghost is greatly feared; it is thought it takes up its abode in the hut on the longest pole, but only the spirit of the aunt or of some relative not properly interred, that is not with sufficient pomp or honour, is feared. These latter are greatly feared; they are said to wander about for a few days, perhaps a couple of weeks, then they come and take up their abode in the house and begin to make the inmates suffer. Usually the head of the house is stricken with some disease and the Mandwa has to divine what is the cause; if it is not some person who has bewitched him then it is supposed to be a spirit, and the offended spirit has to be found. This is done by gathering all the information he can from every source. When they are satisfied as to the cause of illness they first try to propitiate the spirit by offerings, and if the person recovers then they say the spirit has gone and is satisfied, and the grave is carefully repaired and kept for the future. Should however the spirit continue to trouble the man then they have to apply to some other Mandwa to come.

The spirit of a relative resents very strongly the corpse being thrown into the grass and not being buried, and even a slave will haunt a house for this offence.

There are stories told of two chiefs who threw out the corpses of their slaves and left them to the wild beasts in the grass; the spirits came to them and would not be propitiated until in the case of the Katambala he consented to have his own body buried only in a cow hide and near the forest and not in the family grave. For years the Katambala has been thus buried, each successive chief has from fear agreed to this mode of dishonourable burial. The Kaira, a chief in Singo, has also for some years not been allowed to be buried owing to one of the former chiefs throwing out a slave's corpse; these chiefs are taken to a hill called Mugulu and the body, which is tied up in a cow hide, thrown over a precipice and left there.

55. The late King Mutesa also had a spirit which haunted him for some years; this was said to be the spirit of one of his wives; she was the favourite and he had some words with her and ordered her to be cut up. This was done and her spirit then refused to permit the remains to be buried; it appeared to the king by night and made him have them removed from one place to another, and when he built a large house in honour of the spirit it demanded first one slave, then another, or cattle until it became very wealthy. The remains were never buried but placed in the tomb built for their reception. Then the spirit would not allow the king to take any other woman to wife, and also told him he would suffer from certain diseases, all of which is said to have come about, and the spirit at last told him when he was going to die.

56. When a person dies the corpse is laid in state in his principal house. The widows and mourners all stand around and the eldest son is brought in. One of the relatives places in the right hand of the corpse the seeds of the *Nsujju* (a kind of vegetable marrow), and the son takes them out with his lips and chews them; he then spits out part of them over the corpse and the rest over one of the widows who has either borne no children or only girls. This woman then becomes his wife. This ceremony is to show to all the mourners the deceased has a son, for no one but his son may perform the above ceremony. This ceremony is called *Kulumira Mpambo*. When the corpse is being interred if the deceased has a grandson he comes and cuts off a corner of one of the bark-clothes which has been left unfolded purposely, and takes it away with him; he then throws the knife with which he cut the cloth at one of the widows, who becomes his wife. This woman must also be one who has borne no male children to the deceased.

During the time of mourning there is no sexual connection allowed among the mourners; the period of mourning may be from ten days to a month according to the rank of the dead person. When it is over the relatives bring large pots of beer and place them at the door of the house in which the mourning is held, then some plantains are cooked and with them are mixed some of the kind only used for making beer to show it is the food of sorrow. Each of the mourners take a little of this food and the remainder is thrown down and trodden under foot in the dance which then takes place. The dance goes on all night, and early next morning,

when it begins to get light, the mourners cut down the main post which is in the centre of the house and put it on the fire. This shows the mainstay is gone. Round the fire sitting on the post gather all the widows who have no relatives or who are of another tribe. All the widows who have relatives stand round the room; should one of the widows who has a relative present go there and sit on the post he would at once remove her or otherwise she would be regarded as the sole property of the heir. A fowl is cooked and divided up and each man eats a little and the widows eat a small kind of fish like a sprat; some only smell it and throw it down. When this ceremony is over the heir is brought and stands at the door of the house, and his uncle (a brother of the deceased) comes and throws over him a bark-cloth, and announces to all those present: "This is the heir of the deceased." Each person then comes and ties on his right wrist a few cowrie shells, and all those who have unpaid debts come to him and announce the amount the deceased owed to them. The heir is next presented with a shield, a spear, and a large knife, and a girl is also given to him as a wife; she carries a smaller knife. They next go to the garden and cut a bunch of plantains of the kind from which beer is made, and this is sent to be made into beer for the people to drink, who rejoice that the mourning is ended. When they return a bark-cloth is placed inside the house in the place of the master of the house, and the heir goes and sits on it. All who come to call and condole with him in the loss of his parent give him a few shells which they place on the bark-cloth.

In the evening a goat is killed and cooked. The liver is cooked separately and given to the orphans and the widows; all the mourners who are clean, that is, have not had sexual relations, are allowed to partake of the feast. If any one, however, who has had sexual relations, eats of the meat, he will be sure to die. During the mourning the hair is unkempt and the finger nails left to grow long and ashes mixed with water are rubbed on the chest. A girdle of dry plantain leaves is worn and plantain fibre placed on the floor and the plantains peeled at the door of the house and the skins left there. All the partitions of the house are also removed and the whole house thrown open. When the mourning is over the heads of all are shaved and the nails trimmed and the house cleaned and renovated. The mourning is then at an end.

The Death and Burial of the King.

When the king becomes seriously ill few people are allowed to visit him, nor are the ordinary people told the nature of the illness; it is always called influenza. Formerly all the wives were allowed to wait on the sick king but on one occasion the wives in their sorrow fell upon the sick man and killed him outright, and after that only a few to act as nurses and the Katikiro were present during the last days of the king. Directly after death the body is washed and the limbs straightened out and the body wrapped in bark-clothes and placed in one of the large houses in the king's enclosure. The king's sister, who holds the office of Nalinya (king's sister), is the guardian with some of the executioners. The large drums kept for

the purpose then beat out the news of the death and the fire at the entrance to the palace, which is lighted every night when the king is in the capital and in health, is extinguished; these are the signs for the people to put on mourning. They at once rush to the bananas for the dried leaves and put on old bark-clothes with a girdle of the dried leaves as the national sign of sorrow and mourning for the king. Then all rush to the king's enclosure, where they remain all night. In the meantime the Katikiro has called up Kasuju, who is the guardian of the princes and together they choose a new king. Should they differ about the prince to be chosen they fight it out, and the stronger party places their prince upon the throne. When the new king is chosen he chooses a new Kago and with the Mugema (keeper of the king's tombs) and the Sebaganzi (brother of the king's mother) the king's uncle, go to the house where the body is lying in state and the king takes a piece of bark-cloth and covers the late king's face. He then with all the people except the Mugema and Kago who remain to guard and look after the dead, goes to Busiro to a place called Budo where there is a large stone on which the new king sits to be crowned.

The body of the late king is taken to Busiro the Mugema's province to be embalmed and is kept there for two months for this purpose. When this period has elapsed it is taken to a hill which has been chosen for the tomb and a house built there for its reception. In this hut a kind of bedstead is built on which a number of bark-clothes are spread and on these the corpse is placed, more bark-clothes are put on the top to cover it and then the door is closed. Around the house a strong fence is made and a number of men and women who held office under the late king are put to death, the men on the right side and the women on the left. They are the Kauta the king's cook, the Seruti the brewer, Sebalija the chief of the herdsmen, and Kalinda the head of the men who tended at the entrance of the enclosure. The women are, Omufumbiro cook, Omusibika keeper of the king's bed, Omusenero drawer of the king's wine, Omulidamazi the keeper of the water. These are brought to the door of the tomb with their hands tied behind them and are clubbed to death; their bodies are not removed but left where they fell, and the strong fence is to keep off the wild beasts. A second fence is then made to enclose all the houses of the keepers of the tomb; these may be fifty or more, all of them women who have been the late king's wives. When the fence is completed a number of prisoners who have been imprisoned for various crimes by the late king, are brought and killed within the second fence and their bodies left as the former were.

After a period of five months the tomb is visited by the new king's uncle and three chiefs Kago, Mugema, and Sebata with a few soldiers, and Gunju, one of the party, enters the tomb and severs the head from the late king's body and brings it out and puts it into an ant heap for the insects to eat off all the flesh. The skull is then taken and washed in a special river Ndyabuworu. The door-posts of the hut are taken out directly the skull has been removed, and the roof allowed to come down so as to prevent anyone else from going into the tomb. The skull

after being cleaned is filled, first, with wine which Kalogo, one of the late king's priests, drinks, and then with milk. This man is especially marked out for the spirit of the late king to possess. Up to this time the spirit has not entered any dwelling but now is to have a place of its own. The skull is then taken to the new king and after he has been told they have brought the king he sends away the skull to the tomb, but the lower jaw is placed in a jar made for the purpose, and this is covered with bark-clothes, and these are made up into the shape of a man and decorated with beads, etc. The skull is taken and put back in the tomb, but the jaw-bone represents the king as still alive and a house is built for its reception.

In this house, which is also bee-hive shaped, there are two rooms, the outer one in which the ordinary people may come and an inner one where the spirit of the departed king is said to dwell. In front of the partition is a throne set and covered with lion and leopard skins, and again in front of this is a rail of spears and shields and knives, most of them of copper and brass and beautifully worked. These keep the entrance to the throne sacred. When the Mandwa who is to be possessed of the king's spirit wants to hold converse with the people in the king's name, he first comes to this throne and speaks to the spirit inside the inner room and tells the business of the people; he then smokes one or two pipes, and after a few moments he begins to rave and is then possessed with the spirit, and speaks in the tone of the late king and speaks in the manner as he would have done. The spirit after making known its wishes returns to the inner room and the man can go away as before. The possession is only periodical.

In this house all the king's wives who bore him children live, and in houses all around it in a large enclosure are other women who were his wives. Their duties are to keep the place in order and look after the large reception room in which there is a carpet of grass which is of a scented kind and so laid that not one blade of grass is out of order. Near the enclosure is the old Nalinya or queen sister who has control of all the place, and with her are several of the late king's chiefs, who now have been pensioned off and hold a piece of land and bear the same title as of old. This place is kept in repair by the new king and all the fences kept in good order. If any of the women die they are replaced by the relatives of the deceased from their clan.

THE JAPANESE *GOHEI* AND THE AINU *INAO*.

BY W. G. ASTON, C.M.G.

[READ AT THE MEETING, JUNE 19TH. WITH PLATE IX.]

SHINTO, the old native religion of Japan, though it contains other elements, is substantially a nature-worship, the chief deities of which are the Sun-goddess, the Moon-god, the Thunder-god, the Wind-gods, and various gods associated with growth and the production of food. These natural powers are conceived of as having human sentiments, and their worship comprises the offering of such objects as would be acceptable to human beings, in order to testify the gratitude of the donor or with the object of bringing down future blessings. Probably the more enlightened worshipper is well aware that the gods make no use of the things presented to them. But this does not affect the real object which he has in view, namely, to make his hopes or gratitude visible to gods and men.

Shinto offerings are of the most varied character. They include weapons, mirrors, tools, agricultural implements, lands, temples, slaves, riding-horses, jewellery, food and liquor, and wearing apparel, whether in the form of pieces of cloth or of the raw material for their manufacture. It was out of this last description of offerings (called *nusa* by the Japanese) that the *gohei* were developed. The clothing of the ancient Japanese consisted of silk, hempen fabrics, and *yufu*, a stuff woven from the inner bark of the paper-mulberry. At first the offerings consisted of so many ounces of hemp or bark-fibre or so many pieces of cloth. But later they assumed a more specialised and conventional form, of which the accompanying drawing (Fig. 2) will give an idea.¹ These were called *Oho-nusa* or "great offerings," and are still in use on important occasions, though for ordinary purposes they have been superseded by the simplified form (Fig. 3), known to us as *gohei*. The *Oho-nusa* consist of two wands, placed side by side, from the ends of which depend a quantity of hempen fibre² and a number of strips of paper. One of the wands is of the *cleyera japonica*, or evergreen sacred tree. The other is of bamboo. Their use is connected with an old Japanese rule of etiquette that presents to a superior should be delivered attached to a branch of a tree, the

¹ A slightly different form of *Oho-nusa* is figured on p. 35 of a valuable paper on "Ancient Japanese Rituals," contributed by Dr. Karl Florenz to the *Transactions of the Asiatic Society of Japan*, December, 1899.

² Reminding us of Homer's *στίμμη θεοῖο*, which was of tufted wool attached to a wand (*σκήπτρον*), *Iliad*, I, 28.

object of which was no doubt to mark a respectful aloofness of the giver from the receiver. The paper-strips represent the *yufu*, or mulberry-bark fabric. The use of *yufu* for clothing having become obsolete, owing to the introduction of cotton, paper, which in Japan is made of the same material, was substituted for it. In the *Gohei*, the hemp and one of the wands are omitted. Another form of *nusa*, called *Ko-nusa* (little *nusa*), or *Kiri-nusa* (cut *nusa*), consists of paper, with leaves of the sacred tree, chopped up and mixed with rice. Travellers in ancient times carried this mixture with them in a bag, and made offerings of it to the local deities along their way. It was also used when in danger from shipwreck.

The reason for the prominence given to the *gohei* almost to the exclusion of other kinds of offerings is to be looked for in the fact that the materials for clothing which they represent were the currency of ancient Japan, in which all values were estimated. They have therefore a representative character. We are told, for example, that in A.D. 1151 a wild boar for offering at a certain Shinto festival being unprocurable, eight pieces of cloth (its estimated value) were substituted. The representative quality of the *gohei* is further illustrated by the circumstance that *gohei* made of copper cash (Fig. 5) were known in later times.

Along with the alteration in the form of the *nusa* to the present *gohei*, there came a change in the mental attitude of the worshipper. Originally mere offerings, they were at length by virtue of long association looked upon as representatives of the deity. Scholars like Motoōri and Hirata denounce this view as a corruption of later times, but it is no doubt at present the prevailing conception. Hepburn's Japanese dictionary knows no other. It is illustrated by the fact that instead of the worshipper bringing *gohei* to the shrine, these objects are now given out by the priest to the worshipper, who takes them home and sets them up in his private *Kami-dana* (god-shelf) or domestic altar.

A further step is taken when it is believed that on festival occasions the god, on a certain formula, called the *Kami-oroshi* or "bringing down the god," being pronounced, descends into the *gohei* and remains there during the ceremony, taking his departure at its close. In the vulgar Shinto of the present day this belief in a real presence of the god is associated with hypnotism. The subject or practitioner holds a *gohei* in his hands, and the violent, unintentional wobbling of the *gohei*, as well as the hypnotic, inspired condition of the subject which ensue, are attributed to the presence of the god, which enters his body by this channel. Mr. Percival Lowell has given an interesting account of this and associated practices in his *Occult Japan*.

Associated with the belief in an actual presence of a deity in the *gohei* is their use in the *Harai* or purification ceremony, when they were flourished over or rubbed against the person to be absolved of ritual uncleanness. It is stated by Mr. Fukuzawa, in his recently published autobiography, that when the late Duke of Edinburgh visited Japan in 1870 he was subjected to this ceremony before being admitted to the Imperial presence. No such ceremony could possibly have been permitted in their presence by the British officials concerned; but at a

convenient distance, rites with *gohei* and other Shinto appliances were performed in order to exorcise any evil spirits or influences which might have accompanied the Prince from abroad.

There is a still further stage of belief, not, in so far as I am aware, illustrated by the *gohei*, in which the object which has begun by being an offering ends by being a distinct god. The *gohei*, however, are not the only material receptacles for the Shinto divinities. Almost every shrine contains a *Shintai* or "god-body," also called a *Tama-shiro* or "spirit-representative." The *Shintai* has points of resemblance to the Greek *ἄγαλμα*, which was originally, as its derivation shows, a votive offering. It is usually packed away in a box, the contents of which are sometimes unknown even to the priest, and may consist of a mirror, a sword, a string of beads, a curious stone, a pot, a bow and arrows, etc. Some of these objects, which it is clear were originally merely offerings, have attained to the rank of independent deities. Thus the mirror, which is the *Shintai* of the Sun-goddess, figures in the ancient mythical records not only as an offering suspended to a branch of the sacred tree but as an emblem or representative of the goddess and even as "the great deity worshipped at Ise." It is also the object of a separate cult under the name *Ame Kakasu no Kami*. The sword *Futsunushi*, presented by the Sun-goddess to the first Mikado, Jimmu Tennō, has numerous shrines dedicated to it. Another sword, called *Kusanagi* or "the herb-mower," has been worshipped for centuries at Atsuta, near Nagoya. It was this sword which *Susa no wo* found in the tail of the great serpent slain by him to rescue a Japanese Andromeda, and sent as an offering to his sister, the Sun-goddess.

The history of the *gohei* and *Shintai* lends strong confirmation to Mr. Herbert Spencer's view that fetishism is a later religious development.

May we not trace some sort of analogy between these Japanese ideas and the Christian conceptions of the eucharistic bread or wafer as a sacrificial offering, an emblem, the seat of a divine presence, or as *le bon Dieu* Himself? The history of the Indian god Soma also presents points of analogy.

The *inao* are to the Ainus of Yezo what the *gohei* are to the Japanese. They are made of willow wands whittled at the top into a mass of shavings in the manner shown in the illustration (Fig. 4). If they are compared with the *Oho-nusa* (Fig. 2), it will be seen that there is a general resemblance of form, the differences being attributable to the different material used. The *inao* no doubt had their origin among a ruder and poorer people, with whom paper was difficult to procure. That they are directly traceable to Japan is further shown by the fact that the alternative Ainu name for *inao* is the Japanese word *nusa*. This is by no means the only evidence of a close relation between the Ainu religion and Shinto. The important Ainu words *Kamui* (god) and *ongami* (prayer) are also of Japanese origin. Another point of agreement is the pre-eminent position given in both religions to the Sun-goddess and the recognition by both of a dual principle in the pairs of spirits—the *aratama* (rough spirit) and *nigitama* (gentle

spirit) of the Japanese, the *shi acha* (rough uncle) and *mo acha* (uncle of peace) of the Ainus.

There is, moreover, another curious link between the Ainu *inao* and the Japanese *gohei* or *nusa* which has a special interest of its own. We learn from the *Makura no Sōshi*, a work written about A.D. 1000, that it was then the custom, during the spring festival, for the boys in the Imperial Palace to go about striking the young women on the loins with the potsticks used for making gruel¹ on that occasion. This was supposed to ensure fertility. It reminds us of the Roman practice at the spring festival of Lupercalia, alluded to by Shakespeare in his *Julius Cæsar*—

“Forget not in your speed, Antonius,
To touch Calphurnia; for our elders say
The barren, touched in this holy chase,
Shake off their steril curse.”

Now the Japanese antiquary and novelist Kiōden, in his work entitled *Kottoshū*, written about a century ago, informs us that this custom was at that time still in vogue in the northern province of Echigo. He gives a drawing (Fig. 5) of the sticks used for the purpose, which, it will be observed, are in every way similar to the Ainu *inao*. For the explanation of this coincidence we are left to conjecture. It seems possible that the persons who first used these objects instead of the older potsticks were familiar with them as cheaper substitutes for the hemp or paper *gohei* or *nusa*, and that the practice dates from a time when they were no longer considered as offerings but as embodiments of a divine presence, and therefore naturally possessed of greater potency than common potsticks. One name for them is *iwai-gi*. *Iwai* means taboo, religious abstinence, worship, sacred, holy, congratulation, blessing; and *gi* is for *ki*, wood or stick. Another name is *Kedzuri-kake*, which means “part-shaven.” A Japanese book of the early eighteenth century informs us that sticks resembling the wands used for offerings at the purification ceremony were part-shaven, and set up in bundles at the four corners of the Gion shrine in Kyoto on the last day of the year. The priests, after prayers were recited, broke up the bundles and set fire to the sticks, which the people then carried home to light their household fires with for the new year. The object of this ceremony was to avert pestilence. These sticks were also called *Kedzuri-kake*.

Authorities are not agreed as to the precise character of the *inao*. Most travellers, including Miss Bird, usually an accurate observer, describe them as household gods. On the other hand, the Rev. John Batchelor, who resided for eight years among the Ainus and was well acquainted with their language, says in his *Ainu of Japan*: “It is no matter for surprise that travellers have taken

¹ The gruel was of small red beans. Red is a masculine colour and is calculated to correct the feminine (or gloomy) influences remaining over from the winter season. But this is perhaps a later hypothesis only.



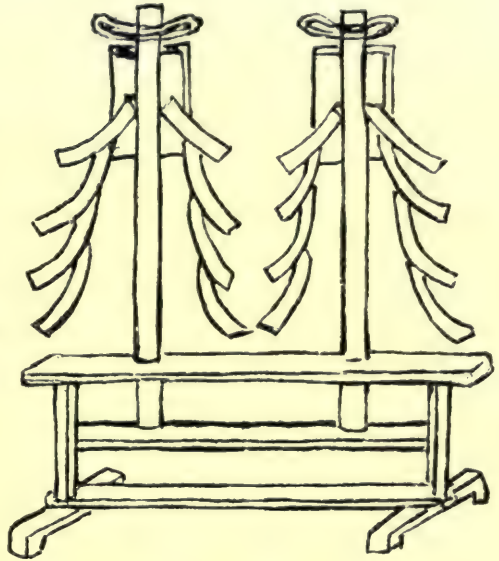
1. IWAI-GI.



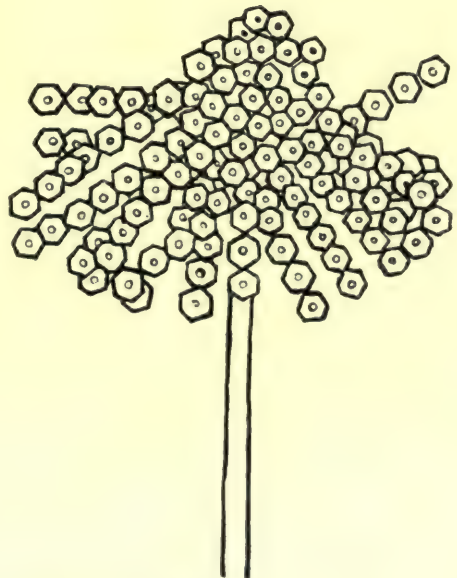
2. OHO-NUSA.



4. INAO.



3. GOHEI.



5. GOHEI OF COPPER CASH.

the *inao* to be gods; in fact, it would have been a great wonder had they not done so. But enough has been said to show that in no sense can the willow-wands be called gods. They are merely offerings to the various deities."¹ Mr. Batchelor's view is doubtless in the main correct. At the same time, when we remember the craving of some humanity for a tangible, visible, concrete object of worship, and the fact that in Japan and elsewhere the offering has been known to pass into the god, we may suspect that the contrary opinion held by Miss Bird is something more than mere surmise. It would not be surprising to find that there are some Ainus to whom the *inao* are actually gods.

¹ In a paper contributed by Mr. Batchelor to the *Transactions of the Japan Asiatic Society* in 1895, he modifies the statement quoted above, and admits that in some cases the *inao* are direct objects of worship, or, to use his own words, "genuine fetiches."

NOTE UPON THE NATIVES OF SAVAGE ISLAND, OR NIUÉ.

BY BASIL THOMSON.

WHEN Cook discovered Savage Island, he found it impossible to establish communication with the natives: "the endeavours we used to bring them to a parley were to no purpose; for they came with the ferocity of wild boars, and threw their darts." The Rev. John Williams, during his memorable voyage in the *Messenger of Peace*, in 1830, recruited two Niué boys, and subsequently sent them back to the island as teachers, but, after a time, influenza having broken out among the natives, and the two youths being accused of bringing it from Tahiti, one was killed together with his father. The other escaped in company with the boy who returned as a Christian teacher in 1848. Dr. Turner, who visited the island in 1848 and in 1859, writes, "Natives of other islands who drifted there in distress, whether from Tonga, Samoa, or elsewhere, were invariably killed. Any of their own people who went away in a ship, and came back, were killed, and all this was occasioned by a dread of disease. For years after they began to venture out to ships they would not immediately use anything obtained, but hung it in the bush in quarantine for weeks."

Dr. Turner had great difficulty in landing the Niué teacher trained in Samoa; armed crowds rushed down to kill him; they wanted to send his canoe and his chest back to the mission ship as soon as they were landed, saying that the foreign wood would cause disease among them. It is possible that an epidemic following the Tongan invasion, or the arrival of castaways from other islands, had engendered this dread of disease that led to so murderous a system of quarantine. The only tradition of a visit from foreigners that seems to have an historical basis, is that recording the invasion of the Tongans. According to the Niué tradition, the natives awaited the Tongan attack behind a chasm, a rent in the limestone roof of a cave near Alofi, which they had cunningly concealed with boughs. The Tongans, ignorant of the pitfall, attacked desperately, and were precipitated into the cave and killed. The cave was shown to me, and some human bones were unearthed in proof of the story, but seeing that until recently caves were the usual places of burial, they were not convincing evidence. A Tongan tradition evidently refers to the same event.

At a date that may be computed by generations as about 1535, Takalaua, the King of Tonga, was assassinated, and his son, Kau-ulu-fonua, pursued the murderers from island to island until he caught and slew them at Futuna. Among

the islands in which the murderers took refuge was Savage Island, and here the pursuers landed upon a rock separated from the mainland by a narrow chasm, across which the enemy had laid boughs. But in this version, as might be expected from a Tongan narrator, they overleapt the chasm, and put the native army to flight—a more probable result of the battle when the relative prowess of the two peoples is compared. There is another Tongan tradition of a canoe belonging to the King of Tonga drifting to Savage Island, but the tradition is too fragmentary to warrant any attempt to fix the date. But the facts that the Savage Islanders use the word “Tonga” to denote all foreign countries, and that “Tui Tonga” was the title of the best known of their kings, point to an intercourse with Tonga in comparatively remote times.

On the other hand, it is quite clear that the Savage Islanders are not a mere offshoot from the Tongan stock, nor even pure Polynesians. The institutions of Tonga are a dominant aristocracy; those of Niué are republican. In Tonga every public ceremony was accompanied by a highly elaborate ritual; in Niué dignity and gentle manners were unknown. The Tongan mode of warfare was frontal attack by desperate charges; the Niuéan, a series of feints intended to frighten the enemy, and entice him into ambush. The physiognomy of the people is not pure Polynesian; there seem to be two types, the one Polynesian, and the other Micronesian, with all the gradations of hybrids between the two races, and I question whether the island was not originally peopled from the Line Islands, and the population modified by successive immigrations from Tonga, Raratonga, Aitutaki and Samoa. The language, it is true, appears to be very much like the Tongan, for I was able to understand the gist of everything that was said, but the immigration of a superior race has often had the effect of impressing its language and laws upon the inferior long before any change takes place in the physical type. In Ongtong Java, for instance, there is a Melanesian race speaking a Polynesian tongue, the result of intercourse with the crew of a single canoe which drifted thither from Tonga, in the latter half of the eighteenth century.

The institutions of Niué seem always to have been republican. In ancient times the ruling power was held by the “toa,” or fighting men, and the party that happened for the moment to be in the ascendant elected a king to be their mouth-piece. It was a dignity that cost its holder dearly, for the object of the opposition party was invariably to kill the king, and a violent death had come to be so often the appanage of royalty that for eighty years before the introduction of Christianity, and the consequent cessation of warfare, no one could be found willing to undertake the office. Since the missionaries have controlled the island there have been three kings; they were elected by the chiefs of villages, who had been themselves elected by the people. They governed with the consent of a council of these chiefs which met in the open air once a month, and they carried out their decrees by the force of public opinion. There were no taxes beyond the obligation to provide feasts for these councils, and occasionally to carry food to the king, or to the chiefs of villages.

The following is a list of the kings as far back as their names are recorded :—

Punimata, of Halafualangi, reigned at Fatuaua. (Died.)

Ngalianga, of Pulaki. (Killed.)

Patuavalu, of Puato. (Died.)

Fokimata, of Pulaki. (Died.)

Pakieto, of Utavavau. (Starved to death.)

Interregnum of eighty years.

Tuitonga. (Succeeded 1876.)

Fataaiki. (Succeeded 1888.)

Tongia. (Succeeded 1898 after interregnum of two years.)

Religion.—There were no idols in Niué. The two great deities were, as in New Zealand and in Tonga, Tangaloa and Mau'i. There is no tradition of them as living men. Mau'i pushed up the island by successive efforts, first as high as a reef, awash at low tide, and then as high as Tonga, and then, by a final heave, to its present height. The Niué story of the peopling of the earth is almost identical with the Maori tradition. The earth lay locked in the embraces of her spouse, the heaven, and man, their progeny, lying between them, panted for air. Uniting their strength, men tore their parents apart, and the rain-drops are the tears shed by Heaven at being sundered from his bride.

Every tribe had its tutelary deity, who was probably a deified ancestor. The belief in an after-existence was shadowy. The virtuous passed into Ahonoa (Everlasting Light); evildoers into Po (Darkness). The virtues were kindness, chastity, theft from another tribe, and the slaughter of an enemy; the vices, theft from a member of one's own tribe, breaking an agreement or a tabu, cowardice, and homicide in time of peace.

That the dead reappear is believed even now after many years of mission teaching. When a man is dying his friends take food to him, and say "Be good; if you leave us, go altogether." When they buried the body they threw heavy stones upon the grave to keep the "Aitu" down, and wailed forty nights. Only three years ago a woman burned her daughter's grave, because she said that the spirit was afflicting her with sickness. They spread a piece of white Seapo (bark-cloth) beside the body, and the insect that first crawls upon it is carefully wrapped up, and buried with the body; it is the Mo'ui, the Soul.

The dead cannot be summoned to answer questions, but even now widows go to the graves of their dead husbands, and call upon them to help them when they are oppressed.

The office of priest, Taula'atua, was hereditary. Priests were inspired by a draught of kava (*piper methysticum*) which was not drunk at other times. The offerings made to the gods were the priests' perquisites. There were no temples; the gods visited their priests in sacred mounds or clearings. In late heathen times the gods did not take animal forms, but there is a trace of totemism in the tabu of certain animals to particular tribes. The moko lizard peculiar to the

island was sacred throughout Niué; the Lulu owl was tabu to the people of Alofi.

The priests, both male and female, had much political influence, and the "toa" found it to their advantage to be on good terms with them, although they themselves had the power of invoking the gods without the intermediary of a priest.

There was no festival for initiation, though a feast was always held when a boy assumed the *maro*, the girdle of males. Ceremonial purification was necessary for those who had touched a dead body, or infringed a tabu. These were forbidden for a period to lift food to their mouths; they were fed by others, and drank as animals do. Human sacrifice was unknown.

There is a very curious survival of circumcision, a rite which, the natives say, has never been actually practised since they can remember, though it is almost universal in Tonga, Samoa and Fiji. The child is laid on the ground under an awning of native cloth, and an old man makes the sign of circumcision round the foreskin with his forefinger. A child not so initiated is never regarded as a full-born member of the tribe. Tattooing was not practised in ancient times, but it is now being introduced by men who have been to Samoa or Tonga as labourers.

Witchcraft.—There is a prevailing belief that people can be hag-ridden. Not long ago a woman of Alofi was so affected. She rushed madly about the country, and seemed to be incapable of sleeping. When asked whose spirit had entered into her, she readily gave his name, and though her friends knew no way of exorcising the evil spirit, she eventually recovered. Exorcism by secret invocation is practised to neutralise curses. The ordinary form of witchcraft was to take the soil on which an enemy had set his footprint to a sacred place, and curse it in order that he might be afflicted with lameness. In preparing for war a piece of green kava was bound on either side of the spear to strike the enemy with blindness. Nowadays the commonest form of witchcraft is to put a live lizard in a bottle and bury it under a cocoanut tree; any person who drinks the water of the cocoanuts is destroyed. I asked King Tongia whether the priests had the power of making warriors invulnerable. He replied that they all claimed to have this power, but that, so far as his observation went, it was unwise to trust only to their skill: he had observed that the foolhardy got killed all the same.

Diseases.—Mr. W. H. Head, who has been more than 30 years on the island, stated that yaws (*Tona*) and phthisis were quite unknown before the arrival of the Samoan teachers. The natives, when he first arrived, generally seemed to die of old age. Coughs and colds were then unknown. The diseases of that time were Makulokuli (a difficulty in passing water), lupus and scrofula. Since the intercourse with ships, the policy which earned for the Niué people from Cook the name of "Savage Islanders," has been amply justified. In these days every child has yaws as a matter of course, though the disease might easily be stamped out by isolation. Whooping-cough has never left the island since its introduction. Measles, introduced in 1898 by a returning labourer,

occasioned about 100 deaths, but, though it lasted twelve months, so efficient was the natives' quarantine of infected villages, that the village of Tuapa escaped it altogether. Syphilis, unknown 34 years ago, is said to be very prevalent in the tertiary form, especially among infants: as its native name, "Tona Tahiti," indicates it was brought from Tahiti. There is not much ophthalmia, which is strange, in view of the enormous number of flies that used to infest the island. It is a remarkable fact that the flies completely disappeared early in the present year 1900. Not one was seen during my visit. Deformities are rare. There are a few cases of insanity, and the people are disposed to treat them unkindly. Even in these days serious illness is always regarded as possession by an evil spirit.

Medical Treatment.—Nearly all the old women are medical practitioners, and the number of herbal decoctions that they administer to a sick person is incredible. The best known of these native doctors take heavy fees in kind, but their faith in their own nostrums must be slender, for they themselves have recourse to the dispensaries of the Mission and Mr. Head whenever they are ill. Mr. Head told me that he finds that the natives require smaller doses of drugs than Europeans.

Infanticide used to be common in the cases of illegitimate children, and children born in time of war. In the latter case the child was disposed of by Fakafolau, that is to say, it was put into an ornamented cradle, and, with many tears, set adrift upon the sea. Mothers are very affectionate to their children.

Midwifery.—A professional midwife attends at delivery, and the husband may, or may not, be present. The woman is delivered in a sitting posture. The midwife assists the labour by squeezing the abdomen: if the afterbirth is slow in coming away she becomes frightened, and tries to hasten it by treading on the abdomen. The umbilical cord was formerly severed with the teeth rather near the child: it is now cut long with scissors, and coiled down without tying. Feasts were held at various stages in the infant's growth.

Mal-presentations are very rare, and the women suffer but little in childbirth. Mr. Head has seen women walk four or five miles the day following their delivery. The child was usually suckled about twelve months, during which period there was strict sexual abstention between the parents. It was weaned upon taro, chewed by the mother, who now, unfortunately, is addicted to smoking the rankest tobacco in a pipe.

Abortion was formerly common, because if a couple did not come together with the consent of the girl's relations, they were punished. Drugs and trampling on the abdomen were the usual methods employed. Abortion seems to be less common now since the law against seduction is administered with caprice, and influence can generally be brought to screen those who offend against it. An illegitimate child has no disabilities, and its parents do not suffer in public estimation. The absence of so many of the men, and the consequent predominance of women, are sufficient to account for a large increase in illegitimacy.

The marriage of first cousins is not popular as in Fiji. The offspring of two

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There is a very curious survival of circumcision, a rite which, the natives say, has never been actually practised since they can remember, though it is almost universal in Tonga, Samoa and Fiji. The child is laid on the ground under an awning of native cloth, and an old man makes the sign of circumcision round the foreskin with his forefinger. A child not so initiated is never regarded as a full-born member of the tribe. Tattooing was not practised in ancient times, but it is now being introduced by men who have been to Samoa or Tonga as labourers.

Witchcraft.—There is a prevailing belief that people can be hag-ridden. Not long ago a woman of Alofi was so affected. She rushed madly about the country, and seemed to be incapable of sleeping. When asked whose spirit had entered into her, she readily gave his name, and though her friends knew no way of exorcising the evil spirit, she eventually recovered. Exorcism by secret invocation is practised to neutralise curses. The ordinary form of witchcraft was to take the soil on which an enemy had set his footprint to a sacred place, and curse it in order that he might be afflicted with lameness. In preparing for war a piece of green kava was bound on either side of the spear to strike the enemy with blindness. Nowadays the commonest form of witchcraft is to put a live lizard in a bottle and bury it under a cocoanut tree; any person who drinks the water of the cocoanuts is destroyed. I asked King Tongia whether the priests had the power of making warriors invulnerable. He replied that they all claimed to have this power, but that, so far as his observation went, it was unwise to trust only to their skill: he had observed that the foolhardy got killed all the same.

Diseases.—Mr. W. H. Head, who has been more than 30 years on the island, stated that yaws (*Tona*) and phthisis were quite unknown before the arrival of the Samoan teachers. The natives, when he first arrived, generally seemed to die of old age. Coughs and colds were then unknown. The diseases of that time were Makulokuli (a difficulty in passing water), lupus and scrofula. Since the intercourse with ships, the policy which earned for the Niué people from Cook the name of "Savage Islanders," has been amply justified. In these days every child has yaws as a matter of course, though the disease might easily be stamped out by isolation. Whooping-cough has never left the island since its introduction. Measles, introduced in 1898 by a returning labourer,

occasioned about 100 deaths, but, though it lasted twelve months, so efficient was the natives' quarantine of infected villages, that the village of Tuapa escaped it altogether. Syphilis, unknown 34 years ago, is said to be very prevalent in the tertiary form, especially among infants: as its native name, "Tona Tahiti," indicates it was brought from Tahiti. There is not much ophthalmia, which is strange, in view of the enormous number of flies that used to infest the island. It is a remarkable fact that the flies completely disappeared early in the present year 1900. Not one was seen during my visit. Deformities are rare. There are a few cases of insanity, and the people are disposed to treat them unkindly. Even in these days serious illness is always regarded as possession by an evil spirit.

Medical Treatment.—Nearly all the old women are medical practitioners, and the number of herbal decoctions that they administer to a sick person is incredible. The best known of these native doctors take heavy fees in kind, but their faith in their own nostrums must be slender, for they themselves have recourse to the dispensaries of the Mission and Mr. Head whenever they are ill. Mr. Head told me that he finds that the natives require smaller doses of drugs than Europeans.

Infanticide used to be common in the cases of illegitimate children, and children born in time of war. In the latter case the child was disposed of by Fakafolau, that is to say, it was put into an ornamented cradle, and, with many tears, set adrift upon the sea. Mothers are very affectionate to their children.

Midwifery.—A professional midwife attends at delivery, and the husband may, or may not, be present. The woman is delivered in a sitting posture. The midwife assists the labour by squeezing the abdomen: if the afterbirth is slow in coming away she becomes frightened, and tries to hasten it by treading on the abdomen. The umbilical cord was formerly severed with the teeth rather near the child: it is now cut long with scissors, and coiled down without tying. Feasts were held at various stages in the infant's growth.

Mal-presentations are very rare, and the women suffer but little in childbirth. Mr. Head has seen women walk four or five miles the day following their delivery. The child was usually suckled about twelve months, during which period there was strict sexual abstention between the parents. It was weaned upon taro, chewed by the mother, who now, unfortunately, is addicted to smoking the rankest tobacco in a pipe.

Abortion was formerly common, because if a couple did not come together with the consent of the girl's relations, they were punished. Drugs and trampling on the abdomen were the usual methods employed. Abortion seems to be less common now since the law against seduction is administered with caprice, and influence can generally be brought to screen those who offend against it. An illegitimate child has no disabilities, and its parents do not suffer in public estimation. The absence of so many of the men, and the consequent predominance of women, are sufficient to account for a large increase in illegitimacy.

The marriage of first cousins is not popular as in Fiji. The offspring of two

sisters are absolutely forbidden to marry, but the children of two brothers, or of a brother and sister, may do so without being held guilty of incest. In the old days a young man took a present to the parents of the girl, and, if it was accepted, a feast fulfilled all the formalities. If he took the girl without the leave of her parents, and could not command the influence of the "toas," he was clubbed. The abduction of married women into the bush has lately become common.

Native families are large. Families of five and six are frequently met with, and there is more than one woman on the island who has given birth to sixteen children. There used to be no barren women, but now, owing perhaps to sexual excesses at an early age, childless women are not uncommon. These generally adopt children, to whom they behave in all respects as if they had borne them.

Funeral customs.—Before a man is dead his shroud is unfolded, and the funeral feast prepared, all these preparations being made before his eyes. Food is presented to him as an inducement not to leave his wraith behind him, and his relations trouble his last moments with questions regarding the disposition of his property. His wishes on this subject are held to be as binding as a will. That curious power of self-abandonment, which enables a sick man to foretell the hour of his death, is as common here as it is in other parts of the Pacific. As soon as life is extinct, the body is oiled and wrapped in its shroud, and the mourners agree upon a time for wailing, which they do with every semblance of frantic grief. The feast is eaten, and on the following day the body is carried to a shallow grave, dug in the coral rock somewhere between the public road and the edge of the cliff. Before Christian times it was simply laid upon the floor of one of the burying caves. Stones are laid upon it to keep the "Aitu" down, and a neat grave of coloured pebbles, or a rounded vault of white concrete, lettered in relief, is built over it. The side of the road which skirts the western coast is full of such graves. The acquisitive character of the people is sometimes shown disagreeably in their determination that the most precious of their possessions should be buried with them, lest their relations should benefit by them. Quite lately, an old woman tried to extort a promise from Mr. Head that he would throw her favourite axe into her grave. On the other hand the relations tend the grave for a long time after death, laying garlands and valuables, such as sewing machines, upon it. The old custom of Fakalilifi, or cutting down the fruit trees of the deceased with the idea of doing him honour in preventing lesser men from using what has been his, is dying out, but most of the personal chattels are still destroyed.

Warfare.—The Savage Islanders were not so impetuous as the Tongans and Samoans. They avoided frontal attacks, and trusted rather to terrifying the enemy by a series of feints. Some of these manœuvres were shown to us at an entertainment given in our honour. The warriors, brandishing either a spear, or a two-handed paddle-club, drew their tangled hair over their eyes, and chewed their beards with the most horrible grimaces. They advanced upon one another with a remarkable pantomime of battle-fury, always on the ace of striking, but always retiring before the fatal blow was struck. The king, Tongia, in relating

the prowess of his forefather, "the greatest warrior in the world," showed Mr. Lawes the spot where he had met his match in the "second greatest warrior." Mr. Lawes, seeing that the space was confined, asked which of them was killed. "Oh, neither of them," the king replied. This historic duel was probably a fair example of Savage Island warfare. Cannibalism was never practised.

Land.—The land belongs to clans represented by their heads. In fighting times the braves (*toa*) ignored all rights and seized upon any land that they were strong enough to hold. At present there is land enough for all, and the junior members of the clan come to the headman whenever they want land to plant upon. Titles can be acquired by cultivation. The planting of yams or plantains by permission confers no title, but the planting of cocoanuts does so. Thus, there being no boundary marks, encroachment by planting these trees is a continual cause of friction. It presses particularly hard upon widows and orphans, who are frequently robbed of the land inherited from their dead husbands and fathers. The excuse given for this injustice is that the child belongs to its mother's clan, and that the mother and child should seek land from its mother's kin, but the majority of natives condemn the practice. The Pacific Islands Company have recently applied for a lease of 200 acres, and though the land for which they have applied is not in occupation, they have failed because there is no one whose individual interest is sufficient to warrant him in granting a lease. The headman receives a sort of rent in the form of service and produce, and the first-fruits, formerly offered to the gods, are sometimes presented to him.

Relationships are traced back four or five generations. The people seem to be in a transition state between patriarchy and matriarchy. A grown son succeeds to his father's house and land, but daughters appear to have greater claims upon their maternal uncle. Though these claims are universally recognised, there is nothing approaching the rights of the Fijian Vasu. The testamentary power of a dying man related to his house, his land, and such of his personal effects as ought not rightfully to be destroyed out of respect to his memory.

Justice.—In ancient times the only tribunal was the Pulangi tau, or Council of War. There was no principle of procedure, and the accused was never present. The code was the *Lex talionis*, except when the personal influence of the accused screened him from the consequences of his crime. Murder—that is, the killing of a member of the tribe, for the slaying of an enemy was a virtue rather than a crime—was punished by death. The sentence was carried out by the Kopenga: a man was told off to *afo* (betray) the doomed person by making friends with him, and then enticing him into the bush on the pretence of taking him to an assignation: there warriors lay in wait and fell upon him unawares. Adultery was punished by fine or by the club according to the importance of the offender, and there were instances of persons being condemned to be the slaves of their accusers. The gratification of private revenge was recognised, and justice was administered capriciously as must always be the case in a society that tolerates might as right. From the whalers that visited the island the natives first heard of the stocks as a

punishment, and in a deep cave near Tuapa, from which all light is excluded, some of these instruments may still be seen.

At present there is a judge in each village. A message is sent to the accused ordering him to appear, and if he refuses the court adjourns until such time as the importunities of his neighbours worry him into surrendering to the charge, for there are no paid police. The main object of the trial is to induce the accused to confess. Sometimes he is allowed to swear his innocence on the Bible, for perjury, so committed, weighs heavily on the conscience, and produces illness and consequent confession. When there is no clue to the perpetrator of a crime it is not unusual to curse him on the Bible, and confessions due to fear of the consequences of such a curse are common. The ordinary punishments are labour on the roads, making limekilns (calculated at two weeks' labour each), and fines; but the difficulty of enforcing the two first have led to a preference for fines for all offences, and, as the fines are usually paid by the relations, crime may be said to go unpunished. The commonest offences at the present time are adultery and encroachment on land, the adultery being generally abduction into the bush. For theft and housebreaking restitution is ordered in addition to any other punishment, and it is owing to this wise rule that there are so few complaints against the native government on the part of Europeans. Justice is powerless to deal with great crimes. In 1887 a man named Koteka murdered his brother. He was condemned to perpetual labour on the roads, but, shortly after, a ship coming in, he boarded her without opposition and escaped to Manahiki to the great relief of the native authorities. There is a primitive but very efficacious way of dealing with sedition: the monthly council sends a message to the suspected village that they intend to meet there, and that they expect a lavish entertainment, knowing that, in order to escape this tax, the majority of the villagers will be in favour of law and order, and will enforce it.

The emigration of the young men as labourers is a purely modern development, and it is difficult to explain. Their early experience of recruiters could not have been favourable. In 1867 the notorious pirate, Bully Hayes, called at the island, and, choosing a moment when his vessel was crowded with natives, he made sail. Having landed his 80 unwilling passengers on an uninhabited island, he returned to Niué with the excuse that they had refused to leave his vessel, and, his native crew having enticed some 70 girls on board during the night, he set his course for Tahiti, picking up the 80 men on the way. At Tahiti he sold his passengers as labourers on the plantations, and very few of them ever returned to their homes.

In their industry and energy the Savage Islands are a great contrast to the other Polynesian races. Whether at home or abroad, they do a full day's labour. In Niué men carry loads of copra of 150 lbs. weight nine miles to sell to a store-keeper. They are now attempting to cut through a limestone bluff to grade the road for wheel-traffic. This work, which could easily have been accomplished by blasting, they were laboriously doing by lighting fires on the rock to convert it into lime, and chipping it off with hammers. They earn 4s. a day from the traders

for shipping copra, and lately they have shown a disposition to strike for 8s., which is the smallest advance they seem capable of understanding. The ordinary wages on plantations abroad are £2 a month, but on the steamers they make as much as £3 10s. Within a few days of his return a labourer has parted with all his acquired property to his friends, and is as poor as when he left home, and in a few weeks he is ready to re-engage with the first recruiting vessel that calls at the island.

While their industry shows no symptom of abatement, there is a marked deterioration in their morality. Mr. Lawes thinks that the absence of so many of the young men leads to the corruption of young boys by the women whose husbands are away, or who can find no husbands. Seduction, which was severely punished in heathen times, is no longer resented, but, strangely enough, married men are very jealous of their wives, and never leave them out of their sight, except when they are absent on night-fishing, and then they confide them to the guardianship of their sisters, who are pledged to sleep by their sides. The outward demeanour of the women, however, is modest.

Dress.—The former dress was, for males the Maro, or perineal bandage assumed at puberty, and for females a petticoat of fibre. The men now wear European clothes, and the women the flowing *saque* worn by the women of Samoa and Tahiti. Both sexes wear hats plaited on the island. Whatever has been gained in decency has been lost in picturesqueness.

The villages are the cleanest and neatest in the Pacific. Every native householder has a hut on his plantation, and a neatly built concrete house in the village. The roof is thatched, the walls whitewashed, the windows closed with a sort of rough venetian of wood smoothed with the adze, and pivoted on the centre of each slat so as to exclude the sun while admitting the air. These houses are sometimes floored with rough planks cut from the log with the adze. But the older natives seem to keep these houses for show, using in preference little native-built hovels behind, which they burn down when too ruinous for occupation.

There is a marked decline in the influence of the mission, which formerly held absolute sway, and a consequent recrudescence of heathen superstition. Mr. Bell, who was seven years on the island, says that incantations are now constantly sung over the sick by professional wizards. The mission still wields some authority, through its power of expelling offenders from the church membership, which entails some social ostracism, but Mr. Lawes thinks that his personal influence is declining, especially with those who have been abroad, and have associated with the lower sort of European. With all their faults, however, it is impossible not to like a people who, if they do not respect their own chiefs, pay heed to the opinion of white men; who, with the keenest trading instinct, are honest in their dealings, and exact honesty from others; who, while so excitable that a mere domestic quarrel will drive them to suicide, are energetic, friendly and good-tempered; and who promise, under English control, to be the most contented and prosperous little community in the Pacific.

STORIES FROM THE SOUTHERN NEW HEBRIDES, WITH
INTRODUCTION AND NOTES.

BY SIDNEY H. RAY.

THESE stories, with the exception of the last, were sent to me some years ago by the Presbyterian missionaries in the Southern New Hebrides, the Rev. W. Gray and Rev. Dr. Gunn. They come from a most interesting region of Melanesia, from the islands of Tanna, Aniwa, and Futuna, where the Polynesian and Melanesian people have met and mingled to such an extent that, except in language, they are indistinguishable from each other. The people of the three islands belong to the darkest and most frizzly-haired section of the Melanesian race, but whilst the language of Tanna, differing in some respects from the languages of the northern and central parts of the Melanesian Archipelago, is still to be classed with them as essentially a Melanesian language, the languages of Aniwa and Futuna are in vocabulary and grammar closely related to the tongues of Eastern Polynesia.

The names of the islands of Aniwa and Futuna are decidedly Polynesian, the former meaning "a place abounding in coconuts," and the latter recalling the name of an island of the Tonga group (Horn Island) also called Futuna. The relations of the New Hebrides Futuna and that of Horn Island need not be discussed here, but it may suffice to state that there is no decided evidence of any migration from the eastern island to the western.

The first four stories originated through inquiries being made of the natives as to whether they knew anything about Tangaloa and Mauitikitiki, who are by far the most prominent persons in the folk-tales and myths of Eastern Polynesia. Inquiries were also made regarding various other persons, places, and objects referred to in the Eastern legends. These may form the subject of another communication. In Futuna and Aniwa, Mauitikitiki is called Moshikishiki; in other islands of the New Hebrides (Aneityum, Efate, and Nguna) he is called by his Polynesian name Mauitikitiki. In Tanna the name becomes Motikitiki or Matikitiki. Summaries of the actions of Mauitikitiki in various islands of the east are given by Tregear,¹ but none of them correspond to the Futuna and Tanna exploits related here. The Futuna people also credit Moshikishiki with forbidding the introduction of sorcery into the island. A partially sunken rock at some distance from the shore is pointed out as the canoe which was bringing it.

¹ *Maori-Polynesian Comparative Dictionary*. Wellington, 1891; article "Maui."

1.—MOSHIKISHIKI and TAPOSIESI. *Futuna. Rev. Dr. Gunn.*

Taposiesi¹ was a devourer of men, who devoured all the big people, and kept the children in the *marae*² in Pau³ until they were big, and then he ate them. One day he went up Kirisavini⁴ and met Moshikishiki, who had made himself young like a boy, and had been sharpening a stone axe. Taposiesi asked him, "Whence came you?" "I was playing," he answered. "Come down to your brothers in the *marae*." They both went down, and heard the noise of the boys playing inside. Moshikishiki was put inside too. Taposiesi went away to his plantation. When he was away Moshikishiki asked the children what they were doing. "Playing, just waiting until our grandfather returns." "He is just deceiving you," said Moshikishiki; "he is feeding you up until you are big, and then he will eat you." He then took them away down to Tavesua.⁵ Taposiesi, hearing no sound from the house in the *marae*, came down and found no one inside. "What has become of my grandchildren?" he said. He went down to the cliff, and saw them on the beach below. "What are you doing down there, my grandchildren?" and he went down after them, hoping to enclose them inside the rocks. But Moshikishiki cut the rocks at Masuataga,⁶ and he and the boys went out towards the sea. Taposiesi followed. They went on with Moshikishiki at Taringakasi, and went on to Sia, and climbed up Feiava, and went on towards Mounga.⁷ They climbed *tamakopu*.⁸ The boys became the seeds and Moshikishiki the core of the breadfruit. Taposiesi said, "This is my breadfruit," and went to get firewood to cook it. When he was making the fire the boys watered it (urinated) and put it out. He went away to get more food. When he was away they left the *tamakopu* and climbed by means of the *tarie*⁹ up into the sky. When Taposiesi returned he found no one in the breadfruit tree, but saw them in the sky. "How did you get up there, my grandchildren? Give me the vine (or creeper) that I may climb up." They threw it down to him and pulled him up some distance and then let go. "How did you let me fall?" asked Taposiesi. "You did not take a good hold." He tried again, and fell, and laid down. One of the boys came down like a fly (*tarango*)¹⁰ and examined him. He went up and said, "He is dead." Another came down like a large black ant (*taroata*)¹¹ and examined him. He passed through him, entering at the mouth. "He is dead," he said. The other boys came down. "Where do you stay?" asked Moshikishiki of one. "I am a man of Mounga." "You will stay in Mounga." "What is your land?" he asked of another. "Sia." "Then you will stay in Sia." "What is your land?" "I am a man of Asoa." "You will go to Asoa." "What is your land?" "Akana." "Go." "What is your land?" "Matangi." "Go." "What is your land?" "Raro." "Go." "What is your land?" "Pau." "Then we two will go." And thus Moshikishiki took up his stay in Pau.¹²

2.—MATIKTIKĪ and TĒRAMSĀMŪS. *Tanna. Rev. W. Gray.*

TĒramsāmūs,¹ having eaten all the inhabitants, goes and looks for black people, eats them, then looks for white people (this does not mean Europeans), and takes them and throws them into a hole of a rock and shuts them up, and says to them, that they are to wait for him till he goes and makes *nikasî nerî*² for their food. They remain in the cave and sing and dance.

Matiktikī goes past and knows that he hears dancing. He says, "Ho! who are you?" They dance, but say, "We here." But he says, "Who are you?" But they say, "We here, our ancestor goes to make *nikasî nerî* for our food." But he says, "They say he goes to make *nikasî nerî* for your food, whereas he kills you and goes to make *niparara*³ with you." But one says, "Alas! my father-in-law!" But another says, "Alas! my father!" Matiktikī stands and holds a *fufau*⁴ and breaks in pieces the rock. They come out, and going up, run until they come to a place and see a row of fish shorewards. They eat and leave none of TĒramsāmūs' food.

TĒramsāmūs runs and runs and cleans *nikasî nerî* and goes back to the hole of the rock and sees they are gone. But he says (with bad language), "I have spoilt all my food!" He runs and runs, holding his head down westward and feels it cold; he runs eastward till he feels it hot; he runs and eats his fish.

Matiktikī and the children (the fellows out of the cave) run and feel they are tired (?), and look up and see a *makopo*⁵ hanging. They go up and pull out its core. The children go in and fill up the space (a hole about six inches long and one inch and a half in diameter). Matiktikī sits on the edge of the core hole and puts in again the core.

TĒramsāmūs runs and runs, and feels hunger biting him greatly, and looks up at that *makopo* and sees it hanging. He says, "Let me pluck the *makopo* and cook and eat it, and be satisfied, and search for my food" (*i.e.*, for those who had escaped from the cave). He goes and takes wood, and heaps it together and climbs and plucks the *makopo* and comes down and lays it on the fire and cooks it. The youngsters feel the steam which is killing them. Matiktikī tells them to put out the fire (as in previous story), and the fire goes out. TĒramsāmūs takes away the breadfruit and lays it down and goes and looks again for wood. They pull out the core and come out and put the core in again and run and run, and look up at a she-oak tree, and see it standing inland.⁶ They run inland. Matiktikī says, "Hasten for the she-oak." They hasten and hasten, and come just there below. Climbing up, they all go to the top. Matiktikī has already seated himself in the fork of the tree.

TĒramsāmūs looks for them, and was going hither and thither, and goes up and looks down into a pool of water. Matiktikī tosses frequently his crest of feathers. TĒramsāmūs (seeing Matiktikī reflected in the pool) springs down and splashes in the water-hole and comes up and was standing. Matiktikī says,

"Youngsters! laugh." The youngsters laugh, and say "Ho! what are you doing there after having run hither and thither?" He says, "Alas! my children. How do they manage to go there?" They say, "We went on the palms of our hands." He goes there on his hands and splits them, and says, "Alas! I have split and spoiled my hands. How do you always do it?" They say, "We went on the soles of our feet." (The same thing befalls his feet, his head, and his knees.) Matiktiki says, "We went on this thing," and lets down a small rope, to which Tëramsämüs hangs on, and goes up, and cannot make the fork of the tree, and says, "Alas! my food! You do tease me." Matiktiki takes a *fufau* and cuts in two the small rope, and he falls down and strikes on the ground.

They send forth a black dove. It goes and shouts into his ear, and finds that he lies and is silent. They send a bronze-wing dove, and it wails and finds that he lies and is silent. They send a *miahê*.⁷ It bites him and sees that he lies and is silent. They send a *kauyameta*.⁸ It goes and stoops and passes right through the body. They see blood stains upon it. (Hence its red breast.) They exclaim, "He is dead verily." They come down and go and behold. Matiktiki takes a bamboo fishing-rod (from which he makes a knife) that he may lance the body. One by one they rise till every one who had been eaten came to life.

3. TANGAROA, THE ORIGIN OF COCONUTS. *Aniwa. Rev. Dr. Gunn.*

Tangaroa¹ lived in Tavakosura in Aniwa. There was a woman, named Keke, in the district of Ravaru. Tangaroa was one day following the course of the vine of a *keire*,² and Keke met him. He took her for his wife, and they had a son, and they lived in Tavakosura. Tangaroa now and again left Aniwa and went over to Rupapu³ and to Nahabusima⁴ and to Namera⁵ and to other parts of Tanna. When he went away, he left part of him behind as he was big and long like a house.⁶ Once he went away altogether, and then the woman took her child and returned to Ravaru. When Tangaroa returned to Tavakosura, he found that his wife and child were gone. "Where are they two gone to?" and he blew a Pan's pipe. "What is that?" asked his wife of those round about. "Oh! it is only the wind blowing through the *toa*⁷ leaves." The whistling continued, and she began to clean up the premises, and swept it all round. Then he came in gradually and filled up the whole space. She got some *kava*,⁸ and some other roots, and chewed them for him to drink. He said, "If, when I drink it, I live, then we three shall stay together, if not, you will cut off my head, and bury me." He drank the *kava* and died at once. She cut off the head and buried the body, and then planted the head in a heap of rubbish in the premises. It grew and became a *nabuanu*.⁹ A fence was made round it. It grew larger and became a *niu*,¹⁰ and a larger fence was put round it. Keke gave her son the coconuts that grew on it, but gave none to others.

Others ate the fruit of the *futau*,¹¹ and the *pau*.¹² His mother told him not to give any of his food to others. One day he was out with other children, and he

saw them eating puddings of these fruits. He asked them to give him one, but they refused. He said, "I have a very good pudding myself." "Let us see it?" they asked. He returned to his premises, brought the coconut made into a pudding, and gave it to them. Each one took a bite of it, and they ate, and ate, until they ate off his hand. He went back to his premises crying. When his mother saw that his hand was bitten off, she was angry and pulled off the leaves of the coconut tree. She threw away *tanojivo*,¹³ and they fell in Samoa, Rarotonga, Niue (Savage Island), and thus these islands have large good coconuts, while the bad ones have been left for Aniwa.¹⁴

4. TANGALUA and SEIMATA. *Tanna. Rev. W. Gray.*

Tangalua¹ had an Aniwan woman, Seimata, as his wife. She had a little boy. The Aniwans hated Tangalua, because, as they said, he was not a man but only a ghost.² So they killed him with a big dose of *kava*. Before he died he told Seimata to watch the place where he was buried, for something would grow there that would be food for her and her child. As Tangalua lay drunk with *kava* he wagged his tail³ again and again, and died and was buried. Out of his two eyes grew a coconut tree.³ But only Seimata and her child knew that its nuts were good to eat. One day Seimata left her little boy alone, eating a nut, and told him not to tell anyone where he got it. Some boys got him to show them the tree. They pulled nuts and ate them. One boy in his greed ate the points of his fingers. Seimata was very angry, and pulled up the tree and tore it to fragments. The wind scattered these among all the islands, so they all have coconuts now.

5. *The ORIGIN of DEATH. Tanna. Rev. W. Gray.*

Munganeiveiva, having become an old woman, goes and takes her grandchild in her arms, and walks with the aid of a stick and goes down seawards in order that she shall bathe. She sets down her grandchild in a cavity of a white coral rock, and sheds her skin and bathes. Then she takes a different skin and becomes a young woman and puts on a *kwanmari*,¹ and goes in order that she may take her grandchild in her arms. She says, "My grandchild! let me take thee up in my arms." But her grandchild says, "Thou art a different person; my grandmother is not here." But her grandmother says, "I speak good, but thou sayest evil." She goes and takes again the old-woman-skin, and goes toward her, and takes her up in her arms.

It happens like this that we always die, and always die indeed. If she had not hindered her grandmother from taking her in her arms, we would have remained (*i.e.*, lived) and always have been casting our skin and would not indeed have died.²

1. This story is told with very slight variations by the people of Aniwa. They give more details of the attempts of Taposiesi to reach the sky.

¹ Taposiesi. I have been unable to trace this person in the eastern legends.

² The *marae* is the open space in the centre of a Polynesian village. ³ Pau is a place in Futuna. ⁴ Kirisavini is a path leading to the great hill which forms the centre of Futuna. ⁵ Tavesua is the landing-place near the mission station. ⁶ Masuataga is near the landing-place. ⁷ Taringakasi and Feiava are near the mission station and landing-place; Mouna is the central hill of Futuna. ⁸ In these and similar words *ta* is the definite article. *Makopo* is the breadfruit tree; Samoan, *maopo*. ⁹ *Tarie*, the almond tree. ¹⁰ *Tarango*, the common house-fly; Samoan, etc., *lango*. ¹¹ *Taroata*, Samoan *loata*, a large venomous ant. ¹² Mouna, Sia, Asoa, Akana, Matangi, Raro, and Pau are the seven districts into which the island of Futuna is divided. Sometimes the locative particle *i* is prefixed—Imouna, Imatangi, at Mouna, at Matangi.

2. In Tanna a story of this kind is called *Kwanangei*.

¹ Tēramsāmūs is not traced elsewhere in Polynesian or Melanesian myth.

² *Nikasî* is unexplained; *nerî* is the Taro esculentum. ³ *Niparara* is animal food eaten with taro or yam as a seasoning. Those in the cave understood that Tēramsāmūs had gone to get taro *for* their food, but his intention was to get taro to cook *with* them. ⁴ The *fufau* is an axe of white stone used for cutting out canoes. ⁵ *Makopo*, a variety of breadfruit tree. Cf. previous story. ⁶ The she-oak or iron-wood tree (*Casuarina*), *nil* in Tanna, is called *toa* in Futuna and the Polynesian islands. This story may be compared with that of Qat (*Codrington's Melanesians*, p. 165). Qat and his brothers escape from the cannibal Qasavara by climbing an *aru* (*Casuarina*). Qasavara is dashed to pieces against the sky. ⁷ The *mîahî* is an ant with a very painful bite, the *roata* of the previous story. ⁸ The *kauyameta* is a small black bird with a bright scarlet breast. *Kauya* is a prefix to other bird names, e.g., *kauyamît*, an owl. The *Kauyametamin* are the people of the north and west of Tanna, who decorate their bodies with *red* paint; the *Numrikwenimin*, people of the opposite side of the island, do not so paint themselves. *Meta* is the adjective "bloody," from *nita*, blood; *min* is the sign of the plural.

3. ¹ Tangaroa is also called Teirauma or Lakeirea. ² *Keire* is a tuberous plant with a trailing stem, similar to the yam. ³ Rupapu, Port Resolution, Tanna. ⁴ Nahabusima, Weasisi, Tanna. ⁵ Namera, Kwamera, Tanna. ⁶ Tangaroa was a gigantic eel or sea snake. ⁷ *Toa*, iron-wood (*Casuarina*). ⁸ *Kava*, Piper methysticum. ⁹ *Nabuanu*, the sago palm. ¹⁰ *Niu*, the coconut palm. ¹¹ *Fatau* is described as a tree like the *tomano* tree. What the latter is I do not know. ¹² The *pau* is a tree with a pear-like fruit, containing a hard inedible seed. ¹³ *Tanojîro*, the central leaves of the coco-palm; *tano*, its, belonging to it, *jîro*, innermost sprout; Samoan, *tilo*. ¹⁴ In Rarotonga, coconuts are said to have sprung from the head of Tuna. He assumed the shape of an eel, and his head was cut off by his lover, Ina moe

aitu. Twin coco-palms sprang from the two halves of his brain ; one red, sacred to Tangaroa, the other green, sacred to Rongo. The white kernel of a coconut, which was not to be eaten by a woman, was *te roro o Tuna*, Tuna's brain. (Gill, *Myths and Songs*, p. 77.) The conception of Tangaroa as a snake or eel does not seem to occur in Eastern Polynesia.

4. ¹ Tangalua is the Tanna form of the word Tangaroa. ² Because of his eel or snake-like form. ³ *Cf.* the Aniwa and Rarotongan versions.

5. ¹ *Kwanmari*, a young woman's apron. ² This story may be compared with a similar one in Codrington's *Melanesians*, from Omba, Lepers Island, north of Tanna.

NOTE ON SOME AMERICAN PARALLELS TO EUROPEAN AGRICULTURAL CUSTOMS.

BY N. W. THOMAS, M.A.

IN his works on the agricultural customs of the European peasants, Mannhardt only appeals occasionally, and more or less by accident, as it were, to savage parallels. His investigations seldom led him to books which dealt with countries outside Europe, and he was thus debarred from citing testimony, which would not only have told in favour of his views, but also afforded a striking proof that coincidences in custom are not necessarily due to transmission.

There are, no doubt, at the present day many cases of European agricultural ceremonies having been taken over by the Indian tribes. This solution will, however, hardly hold good in the case of the following parallels to the customs of Europe. It was the custom at the end of February to take as large a deer hide as could be procured, and, leaving the horns on it, to fill it with all manner of herbs, and sew it together. The best fruits were fastened to the horns, and other parts fastened to a ring or piece of stuff. They then proceeded to an open space, and fastened the skin to a high tree, turning the head towards the east. Thereupon they offered a prayer to the sun, asking it to give them in the future these same fruits. The king and the magician stood nearest the tree and officiated, and the remainder of the people stood further off. The hide was left up until the following year.¹ The account seems to refer to Florida.

A custom exists or existed until recently in the west of America which may perhaps be regarded as analogous. The Papago performed a rain dance in July, at which a deer's head was fixed on a pole and its flesh underneath; the dancers were unmarried boys and girls who always faced the moon, and bathed when it set.² There is, it is true, no explicit assertion of any connection with agriculture, but it may be inferred. A rain dance performed at a fixed season can hardly have been anything else than a rite to promote the growth of vegetation.

The Pawnees in their religious ceremonies dance, sing, and pray before a bird stuffed with all kinds of roots and herbs; they have a fabulous tradition that the morning star sent this bird to their ancestors as its representative.³

¹ De Bry, *Die Neue Welt*, Pl. XXXV, Frankfurt : 1591 : fol., quoting some early traveller whom I have not yet identified.

² *Am. Anthr.*, O.S. vii, 295.

³ De Smet, *Missions of Oregon*, p. 357.

According to an account taken by Mannhardt from Prætorius,¹ the Prussian Slavs used to kill a goat when they sowed their winter corn, and consumed its flesh with many superstitious ceremonies. They then hung its skin upon a high pole near an oak, and it remained there until harvest. Then a bunch of all sorts of corn and herbs was fastened over it, and after prayer had been offered by a peasant who officiated as priest, the younger portion of the assembly joined hands and danced round the pole. The corn and herbs were then divided among them.

A somewhat similar custom seems to have prevailed among the Wogules. When a reindeer was sacrificed and eaten, the skin with the horns was left as an offering, and sometimes filled with rice.²

The parallelism between the American and European customs is therefore very complete. This does not of course imply that the explanation of the facts is the same. But we may infer that this is the case. The corn-spirit which we know in Europe reappears almost unchanged in America. The Mandan belief on the subject of the animal corn-spirit was very explicit. They said that the "old woman who never dies" sent geese in the spring, and the geese represented her; if eleven wild geese were found, it was expected corn would be plentiful; both corn and the birds were called the "Old Woman." Besides geese the stag seems to have been regarded as a form of the corn-spirit. A great stag or a white-tailed stag was said to keep patches of corn for the "Old Woman."³

Among the Mandans, as with the Pawnees, the corn-spirit was thus mainly identified with birds of various sorts. Among other tribes the corn-spirit seems to have been regarded as incorporate in deer, as in the Florida example. In New England there was a harvest festival, at which new corn and buck's flesh were eaten.⁴ The Cherokees celebrated a similar festival.⁵ The Delawares had a feast of first-fruits; before any corn was eaten twelve of their old men met, and a deer and new corn were provided; the venison was divided into twelve parts, and the corn made into cakes. The twelve men held the venison and corn towards the east, and then consumed them; after this the people were at liberty to eat corn and other fruits freely.⁶

These facts seem to show that there was a parallelism between European and Indian belief as well as custom. They also have a bearing upon a recent theory. It has been argued that the feast of first-fruits was merely intended as a sign that the taboo was removed, and that it was not sacramental. If this is so, it is singular that an animal, which seems to be the representative of this corn-spirit, was also eaten.

¹ *Deliciæ Prussicæ*, p. 23ff. (ed. Pierson).

² *Bidrag till kännedom af Finlands Natur och Folk*, 1891, p. xlv.

³ Maximilian, Prinz zu Wied, *Travels in the Interior of N. America*, p. 378ff.

⁴ Rupp, *History of Berks*, p. 23.

⁵ *Missionary Herald*, xiv, p. 415.

⁶ Beatty, *Journal of a two-months' Tour*, p. 84.

THE SPIRIT OF VEGETATION.

BY E. TREGEAR. COMMUNICATED BY J. G. FRAZER.

[READ AT MEETING, JUNE 25TH.]

AT the time the Maoris of New Zealand were first visited by European voyagers they had no knowledge of cereal crops. Food was abundant, but it consisted almost wholly of cultivated roots such as *Kumara* (sweet potato), *taro* (the edible arum), gourds, etc., largely supplemented by wild plants such as fern-root and by the natural produce of sea and river, forest and plain, birds, fish, etc. The crop on which they most depended was the *Kumara*, a plant not to be confounded with the yam, for the former is a variety of convolvulus. It needed immense care in its cultivation, almost religious care, for every step in its planting and development was attended with elaborate ceremonial. The fields in which it grew were a beautiful sight, now, alas! seldom seen, for it has been almost superseded by "the soul-destroying potato." *Kumara* were planted with great regularity, the tiny hillocks being arranged in lines almost mathematically true from whatever position they were viewed. The fields were manured every season with fresh gravel from the river-beds, the plants were picked over carefully for the destruction of insect pests, and not the tiniest weed was allowed to break the spotless surface of the soil. The *Kumara* was itself a god, not to be cooked with common food, nor handled except with restriction and deference. The houses in which it was stored were *tapu* or sacred (tabooed), and perhaps no food in the world was regarded with such reverence unless it may be some holy plant grown for priestly use alone or for temple-worship.

What were the particulars of the ceremonial by which the culture of the *Kumara* was approached? They differed slightly as to locality, but those practised with antique strictness in one of the most famous places of the plant's growth, viz., Mokoia Island in Lake Rotorua, were as follows:—

The priests went forth to the forest to cut and collect boughs of the sacred *mapou* tree. On that day the people fasted, for that day and the day following were very sacred. The waters of the lake were *tapu* (prohibited), the fish were not to be caught, nor might a canoe put forth on the lake. The priests carried the *mapou* boughs to the altar of the god named "The Father of the South" and recited the incantations reserved for that occasion, laying the boughs upon the stone image until the sacredness had been imbibed by them. In the evening of that day the priests went into the fields, made ready for the *Kumara* to be planted,

and stuck the branches into the ground, repeating another incantation and entreating the gods to send a fertile crop. In the morning of the next day they went again and recited charms while the seed-tubers of *Kumara* were being planted in the little hills which had been measured and set off by sacred cords. If the cultivation was that of a chief, the skull of that chief's father or ancestor was disinterred (*i.e.*, brought from the burial-cave), and placed beside the *mapou* boughs to ensure a good crop. The Arawa tribe, however, at the particular place in question (Mokoia Island) used for this purpose the time-honoured skull and bones of their giant ancestor Tuhourangi, but in many other places the skulls of vanquished enemies were set up round the sides of the fields to promote a large supply of roots.

Everyone connected with the planting or harvesting of *Kumara* was very sacred. All the men, chief and followers, who worked at the planting did so absolutely naked. They kept perfect time as they toiled, giving loud cries at intervals, a shout when the ground was first broken by digging, another when taking the young shoots from the tubers, another when the tubers were set in the little mounds. The *Kumara* sets were addressed as if they were animate objects; they were reminded how they ought to behave to grow well, how the best effects were to be obtained from sun, wind, and rain, how the little roots were to hold on, nor were reminders of the heavenly origin of the plant forgotten.

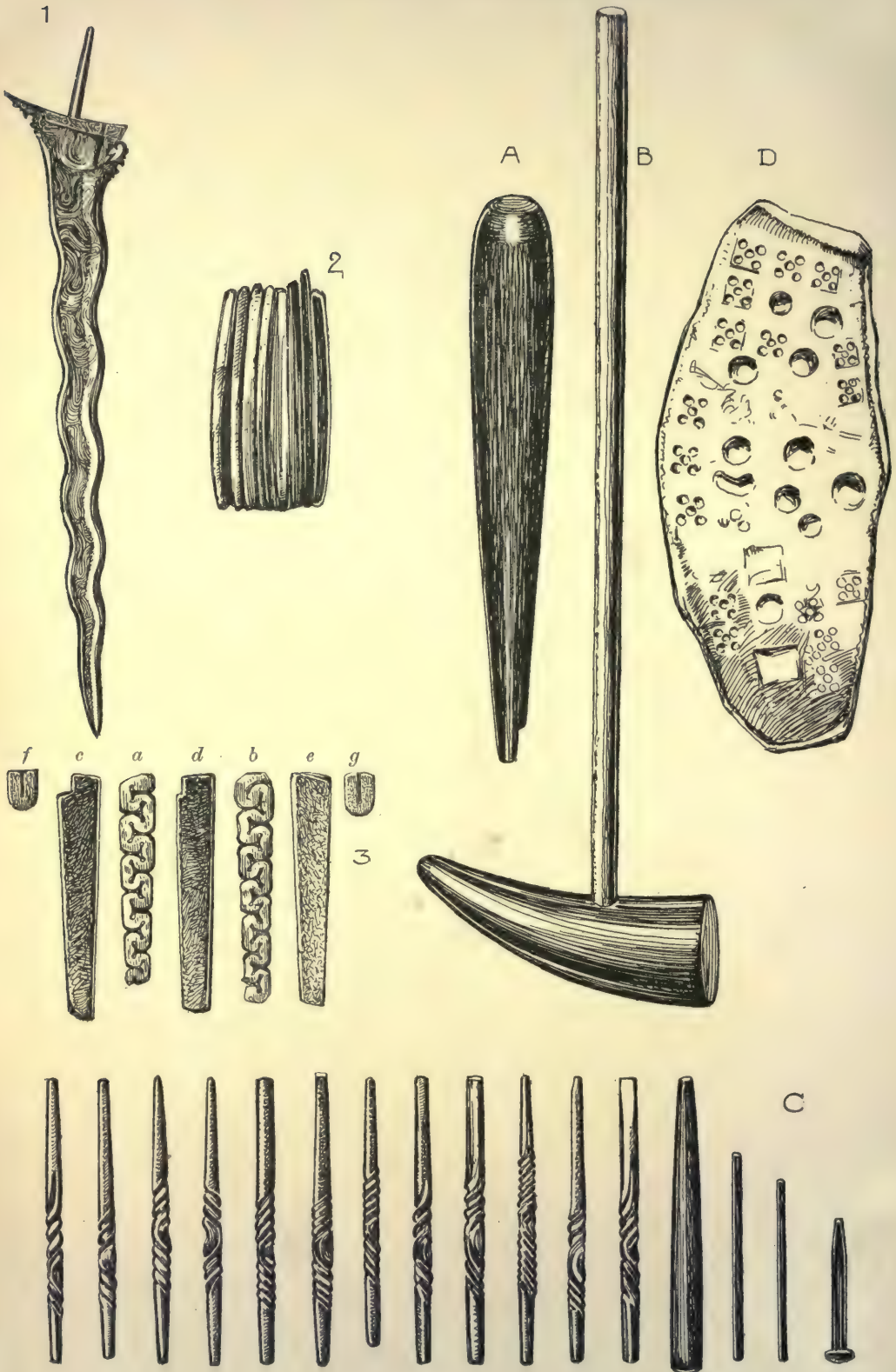
The favourite hymn was an address to the hero-god *Mauī*, beseeching his favour, and by some tribes three stakes or pillars were set up in the cultivation. Each pillar represented a god, these being *Kahukura* (the Rainbow), *Mauī*, and *Marihaka*. Offerings were made to them, and then the priests went to consult the image of *Kahukura* that stood in the temple of the tribe. *Kahukura* was particularly a god to be propitiated, for it is said that it was through him that the ancestors of the Maori first acquired the holy root. If the deity was prepared to send a good crop his image would shake or tremble, and this was accepted as a sign that the *Kumara* fields would be protected by the heavenly powers from human or natural foes. The most learned priest to be procured was obtained, often with immense difficulty, for the slightest mistake or omission made in the ceremonial provoked the anger of the gods and the priest would die.

The above-written description is that of the procedure which took place at the beginning of this century, but if we learn from tradition we shall find that the ceremony of bringing out skulls and skeletons to promote fecundity of crops had a darker origin. Legend says that the *Kumara* was brought to New Zealand from Hawaiki, by two men named Taukata and Hoake. Hoake returned to his own country as a guide to the canoes which started to get more of the roots, but Taukata was sacrificed and his blood sprinkled upon the door-posts of the store-house in which the first crop of *Kumara* was placed, lest the spirit or essence (*mauri*) of the root should vanish and return no more. Hoake did not come back from Hawaiki, but his descendants in the sixth generation arrived in

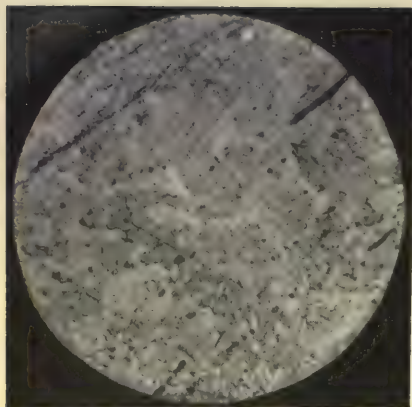
New Zealand with their canoes loaded with *Kumara*. The skull of Taukata was taken from its burial-cave and was set up on the edge of the plantation, a seed *Kumara* being placed in each eye-socket of the skull. From that time on, one of Taukata's descendants was slain each time the *Kumara* ceremonial was observed and the blood of the victim sprinkled on the door-posts of the *Kumara*-store.

All readers of Mr. Frazer's books are aware of the wide-spread ceremonies attending the planting and harvesting of crops. We cannot, of course, expect to find among a people like the Maoris (to whom corn was unknown) any ceremony resembling "the Corn Mother," etc., but it appears to me that those older and more terrible rites connected with the worship of "the Spirit of Vegetation" were once as fully practised by the Polynesians as by the better known peoples of the ancient world.





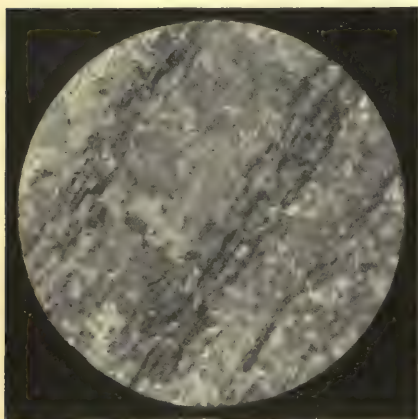




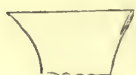
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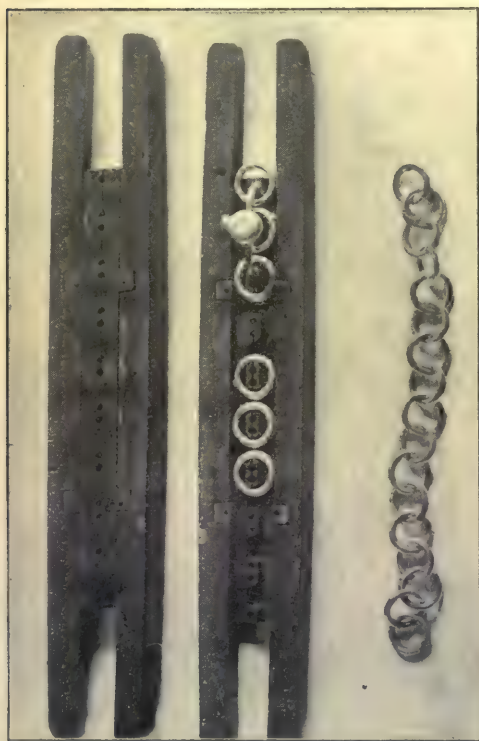
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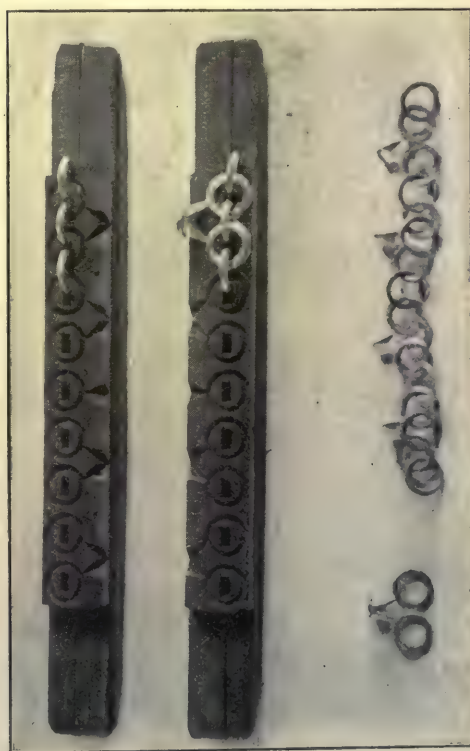
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NOTES ON MALAY METAL-WORK.

BY WALTER ROSENHAIN, B.A., St. John's College, Cambridge.

[PRESENTED FEBRUARY 12TH, 1901. WITH PLATES X, XI.]

MR. W. W. SKEAT recently asked me to examine a number of specimens of Malay metal-work, in the hope that the use of the microscope would enable me to settle all doubts as to the nature of some of the metals used by the Malays. The present notes embody the results of the microscopic examination but in all other respects are based on Mr. Skeat's account of processes which he has himself witnessed. The experimental work described below was carried out in the Engineering Laboratory at Cambridge by the kind permission of Professor J. A. Ewing, F.R.S.

I. THE MAKING OF A MALAY KRIS.

The most interesting specimen is a damascened Malay *kris*-blade, illustrated in Pl. X, 1, XI, 3. It was made for Mr. Skeat near Trenggānu by a Malay smith who spent four days on the work. The tools of the Malay smith are simple and of somewhat primitive construction, but do not differ very much from those to be found in a European smithy; forge, anvils, hammers, tongs, chisels and files are all in use, but the European "cold and hot setts" used for cutting off pieces of iron are replaced in the Malay smithy by a tool called *lépa*. This is simply a small "cold chisel," but it is fixed in a long wooden handle from which the chisel projects at right-angles, and in use the head of the chisel is struck with a hammer while the handle merely serves to hold it in place. Another peculiar feature of the Malay smithy are the bellows, which are made on the cylinder-and-piston principle.

The Malay smith begins the manufacture of a *kris* by making a pile of short bars, as shown in Pl. X, 2. In this pile it will be seen that the bars are alternately thick and thin, and according to the Malay smith, the thick bars are made of a different metal from that of the thin bars. In fact, one set of bars had been made by cutting up and forging down a rod of wrought-iron obtained, presumably, from Singapore, while the others were made by straightening and drawing down the blade of a weeding-instrument called *k'í*. The smith called the wrought-iron *běsi swē*, while he called the metal of the hoe-blade *běsi pāmōr*, so that he seems to have regarded them as two different kinds of iron; on the other hand the Malay name for the steel of their tools is *běsi bājā*—so that the smith must have known that the hoe-blade he used was not made of the same steel as his tools. The

microscopic examination of specimens of these metals has, I think, settled the question of the nature of the *běsi swē* and *běsi pāmōr* used in Mr. Skeat's specimen.

The pile of nine bars as seen in Pl. X, 2, is then heated, welded together and drawn down to a considerable length; but the welding process is very primitive:—the pile is heated, dipped in water mixed with clay, re-heated, and then hammered together. The long bar so formed is heated again, and is then bent into the form of the scroll seen at (a) and (b) in Pl. X, 3. It should be remembered, however, that in making this scroll, the long bar is so held that the bending takes place in the plane of the welds, so that, in the scrolls as we see them in Fig. 3, we have nine laminae standing on edge next to one another, but of course welded together. Two such scrolls are used for each *kris*.

In the next step of the process, *běsi bāja*—i.e., steel derived from old tools—is forged into three pieces, shown at (c), (d) and (e) in Fig. 3, corresponding in shape to the two scrolls (a) and (b). The central layer (d) is much thicker than the others and ultimately forms the body of the blade. Finally two small pieces are cut from the laminated bar of which the scrolls have been made, and are bent to form the pieces shown at (f) and (g) in Fig. 3. The seven pieces shown in Fig. 3 are then welded together, being placed in the order in which they are shown in the figure, the result being a bar having a central layer of tool-steel, with a layer of laminated scroll on either side of it, and that again covered by a thin layer of steel. When this pile has been welded it is forged down to the length and thickness required to give a blade of the desired size. This is done with some care, as the Malays believe that the dimensions of the finished *kris* are of great importance in bringing good luck or misfortune to the wearer.

The "haft" of the *kris* is then formed by notching the edge of the blade close to its base and gradually drawing the portion between the notches down to the form of a thin spike which is intended to enter the hilt. The next step in the making of the *kris* is the production of the waves or sinuosities of the edge. Where these are small and numerous, they are produced by grinding and filing, but where they are fairly long they are made by forging. In this operation the entire blade is bent alternately to one side and then to the other; this is done by supporting its ends upon two anvils and holding it edge up while it is struck with a hammer. But the bending is localised at each successive spot required, by first heating the blade and then cooling it with water, leaving only that part red-hot where the bending is to occur. Each wave thus represents a separate operation of heating and bending.

When the waves are finished, the *kris* is driven into the ground for about two-thirds of its length and thus held firmly while the *dagu* or "chin" of the blade is formed. Two notches are cut in one edge of the blade, the notches are filed out and the small tongues of metal left are then bent as indicated in Pl. XI, where (4), (5) and (6) represent three successive stages of the process.

The blade is then withdrawn from the ground and its cutting edges are roughed out with a file, the blade being held in V-blocks. In this operation the

thick central portion of the blade is carefully left untouched. The next step is to heat the haft and twist it in a way which is believed by the Malays to give it a better hold on the hilt. Then the collar or guard is welded on the blade at the haft end. This collar is made of a piece cut off from the end of the blade in the rough state and therefore consists of alternate layers of steel and "laminated scroll". The piece is forged to the proper shape, punched to receive the haft, and notched on the under side so as to form a sort of "mortice and tenon" joint with the blade when pushed down upon it. Some indentations are also punched on the sides of this collar and it is claimed that they cause the pattern to appear more clearly at a later stage.

The blade being now completed, is hardened by first heating in the forge and then quenching in water, the temper attained being a mere matter of accident or guess-work. The blade is then ground to its final shape on a grindstone hung in a frame; the stone is driven by a string which is pulled and released in such a way as to alternately wind and unwind itself on the spindle of the stone. When such a grindstone becomes eccentric through wear, the Malay smith "trues" it by turning, much as an English smith would do.

The central portion of the blade has been ground down a little in the last operation, but now the whole blade is filed down and is then ready for "pickling" or etching. The blade is laid in a wooden trough containing a mixture of sulphur, salt and boiling rice-water, some of this mixture being rubbed all over the *kris* with a spatula. The blade is left in this liquid for two or three days, when the damascened pattern appears on the surface, and it only remains to clean the blade with limes.

Two questions arise in connection with this process of *kris*-making:—

What are the metals used, and what is the nature of the action that produces the damask pattern? I hoped that the microscope would enable me to throw some light on these questions, and I accordingly examined sections of metal cut from the layers of the final pile shown at (*d*), (*c*), and (*a*) in Fig. 3. The specimens were cut from the ends of the pieces (*d*), (*c*) and (*a*) respectively, and a surface of each was polished and etched with dilute nitric acid in the manner customary for microscopic examination. As was to be expected, the specimens (*c*) and (*d*) were both found to consist of the same metal, a "high carbon steel" such as is commonly used for tools and cutlery; in the specimen it was in the soft or "annealed" state. In this case the evidence of the microscope bears out exactly the statements of the Malay workman as to the nature of the material.

With specimen (*a*) the result was rather different. From Mr. Skeat's account of its manufacture, from alternate layers of *pāmōr* and *swē* iron, I expected a transverse section of the scroll to show alternating bands of two different metals such as wrought-iron and mild steel. The actual section simply shows a series of layers of common wrought-iron, differentiated by no peculiarities of structure or composition, and only marked out by the lines of the very imperfect welds between the layers. The imperfection of these welds is very marked, and is due to the Malay's neglect

to clean the welding surfaces adequately, and the imperfection of the welds plays a most important part in the formation of the damask pattern. Pl. XI, 1 and 2 are photographs of sections of the laminated scroll, seen under normally reflected light, with a magnification of 80 diameters. The micro-structure is typical of common wrought-iron; some of the black bands seen in the photographs are traces of slag-bands which have been eroded by the acid used in etching; the most marked bands, however, are due to the imperfection of the welds between the laminae, where oxide and other impurities have been imprisoned.

The microscope then first of all shows that the laminated scroll is made up of layers of one kind of metal only; in this specimen, at any rate, the *běsi swē* and the *běsi pāmor* of the Malay smith differ only in name. It is of course quite possible that Malay tradition requires the smith to use iron from two different sources although it seems probable that the smith believed he was dealing with two different kinds of metal. It is also just possible that in the specimen I have examined, the scroll was accidentally made of one metal only; but this is unlikely, particularly as I believe the damask pattern can be produced with a scroll made of iron only. According to this view the whole process depends upon the imperfection of the welds between the laminae of the scroll—an imperfection which is very clearly shown by the microscope. This scroll is placed between two layers of steel and subjected to prolonged hammering at a high temperature, the blows falling edgewise on the welded laminae. No better treatment could be designed for the purpose of opening the welds and spreading the individual layers, and at the same time driving the steel into the interstices from above and below. At the temperature of working, the steel is softer and more nearly fluid than the iron, and will therefore force its way into any opening that may occur. For the later stages of the process the outer layer of steel is entirely ground away, and the pickling or etching process brings out the pattern by attacking and corroding the steel while leaving the iron untouched. It is a well-known fact that steel can be stained and corroded by many organic substances—such, for instance, as the juice of the liquorice-root—which do not attack iron, and the active element of the Malay's pickling-bath is probably a substance of this kind.

Final confirmation of the correctness of this view could only have been obtained by cutting a section through the finished *kris*, but as this would have destroyed the specimen, I was not able to do it. Careful examination of the pattern on the surface, however, strongly confirms the view stated above; the pattern is seen to consist of bright uncorroded veins of iron, embedded in, and slightly projecting from a matrix of blackened and corroded steel. Taken with the microscopic evidence showing that the scroll consists of one metal only, I think these facts justify the conclusion that this theory of the production of the pattern is correct.

II. MALAY GOLDSMITH'S TOOLS.

The next specimens with which I had to deal were a set of tools and implements used by Malay gold and silversmiths. These, it should be remembered, are used for working purer, and therefore softer, metal than is used in Europe. The Malays melt their gold in very small clay crucibles, on a charcoal fire, in a portable hearth, with bellows attached; but much of their work is wrought—*i.e.*, done by hammering, filing, chiselling and embossing. Some of the more interesting tools are shown in Plate X, A–D. A is a conical piece of hardwood used for forming rings by bending and hammering gold and silver wire. The hammer is shown at B; its head is made of the tip of a bullock's horn. This very light hammer is also used with the set of punches and chisels seen at C. These chisels have a great variety of points and edges, and they are made from a metal which is almost white, with a slight yellow tinge; this metal is also used for making gongs. An analysis shows it to consist of 70·8 per cent. copper and 29·2 per cent. tin; it is thus a hard bronze not very different from speculum-metal. Its microstructure which I have examined, is fairly characteristic of bronzes containing about 30 per cent. of tin; the microstructure further shows that the metal has not been wrought, but cast in its present shape and finished by cutting and filing. The metal has in fact been cast in a chill mould, and is consequently hard but brittle.

Plate X, D, illustrates the slab moulds used by Malay goldsmiths; these moulds bear ornamental impressions into which gold sheet or wire can be hammered or punched. The impressions in the mould itself are produced while the material of the mould is still soft and plastic. According to the Malay account these slabs are made of a substance called *pandang* which is made by boiling a stiff mixture of finely powdered laterite or limonite, "rock rosin," and cocoanut oil. Mr. Skeat's specimen, however, proved on examination to be a slab of practically pure tin. Mr. Skeat supposes that this is an exceptional example and that the Malays as a rule do use *pandang*.

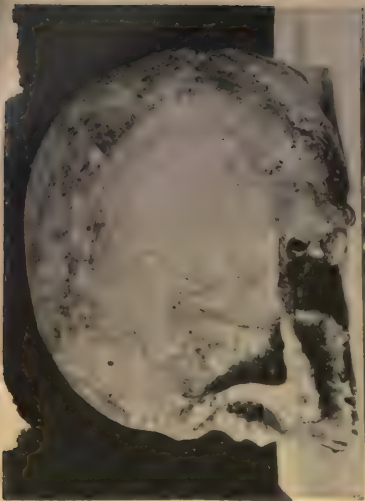
III. VESSELS OF COPPER AND WHITE METAL: *Cera perduta* PROCESS: MALAY LATHE.

Mr. Skeat's specimens further include a number of hollow vessels of copper and white metal. The white metal is called by the Malays "white copper," but it consists of 95 per cent. tin and 5 per cent. copper. These hollow vessels are produced by casting, and the method used by the Malays is similar to the ancient European *cera perduta* process. First, a wax model of the object to be cast is made. The model is then bedded in clay, put on in successive layers alternately with layers of sand. The entire mould when small enough is attached to a stick which serves as a handle; as soon as it is dry the mould is heated and the melted wax is allowed to flow out by a small hole pierced through the clay for that purpose. The mould then contains a cavity of the precise shape of the original wax model, and an article of that shape can be cast by pouring the molten metal in through

the hole through which the melted wax had run out. The articles cast in this way have a rough surface which the Malays remove by turning the article in a lathe. The Malay lathe is always a simple affair, and in one form of it the work is made to rotate in alternating directions by means of a cord which is attached to a flexible rod and passes round part of the work on the lathe to a treadle. When the treadle is pressed the string is pulled and the work rotates in one sense while the flexible rod becomes bent; the treadle and cord are then released and the bent rod straightens itself, driving the work in the opposite sense. This appliance has also been in use in Europe.

IV. CHAINS MADE BY CASTING.

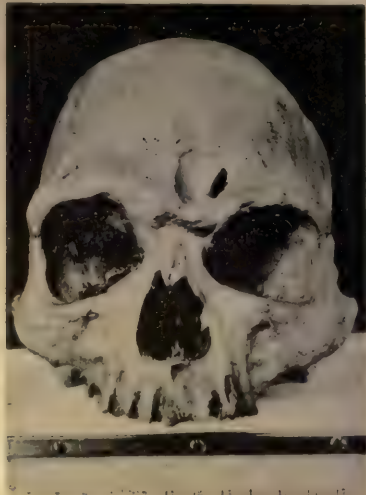
Another striking feat in metal-work is the production of chains by casting which is practised by the Malays. These chains are used to weight and strengthen their casting-nets, and they consist of jointless rings about $\frac{3}{4}$ inch in diameter as at *u* in Fig. 8; the material is a fusible alloy of lead and tin. Jointless chains, produced by casting, are made by European and other goldsmiths, but their production by the Malays is evidence of very high development of metallurgical arts, particularly if the ingenious and well-made moulds are of Malay design and workmanship; and this, I have reason to believe, is the case. The mould itself consists of four separate pieces of brass which fit well together; each piece is attached to a wooden handle by means of which it can be attached to its fellows or removed from them. Pl. XI, 7 and 8 show the mould in two positions, with portions of a chain in place. Each length of chain is produced in two stages. First, a set of rings are cast, attached to one another in pairs (*u*), by using the mould as shown at *x*, only without the three loose rings. These pairs of rings are then cut off from the "tags" which hold them together; then the mould is opened as seen in Fig. 7, and the separate rings are inserted into the recesses provided for them, as at *w* (lower part). Their position now, relatively to the other portion of the mould, is shown at *v* in Fig. 8. From this figure it will be seen that if, when with these rings in position, the mould is closed and another cast is made, the new set of attached rings will be linked through those placed in the mould, as at *w* (upper part) in Fig. 7, and at *x* in Fig. 8; the result, when released from the mould, being shown at *y* in Fig. 8. It now only remains to detach the "tags" resulting from the second casting, and the finished chain is obtained as at *z* in Fig. 7. It is obvious that by placing the last ring of one chain in the first recess of the mould when the next chain is being made, successive lengths of chain may be joined up; so that endless chains can readily be made. This process is very simple in practice, so that it is commonly carried out by the Malay women; but the design and workmanship of the mould are proofs of great mechanical skill and ingenuity.



a



b



c

SKULL OF TORORUKE, OF KABAKADA, IN NEW BRITAIN: HE LIVED SEVEN YEARS AFTER OPERATION.



a



b

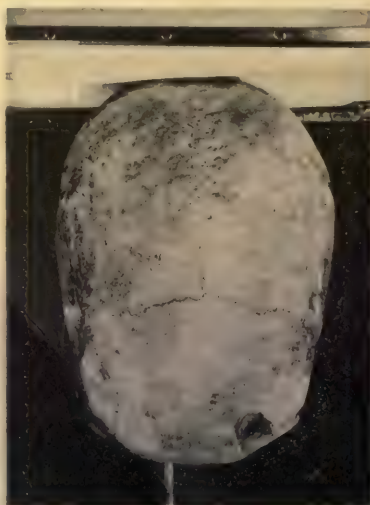


c

1. SKULL OF TOARA, OF KABAKADA, IN NEW BRITAIN: HE DIED TWO HOURS AFTER OPERATION.



a

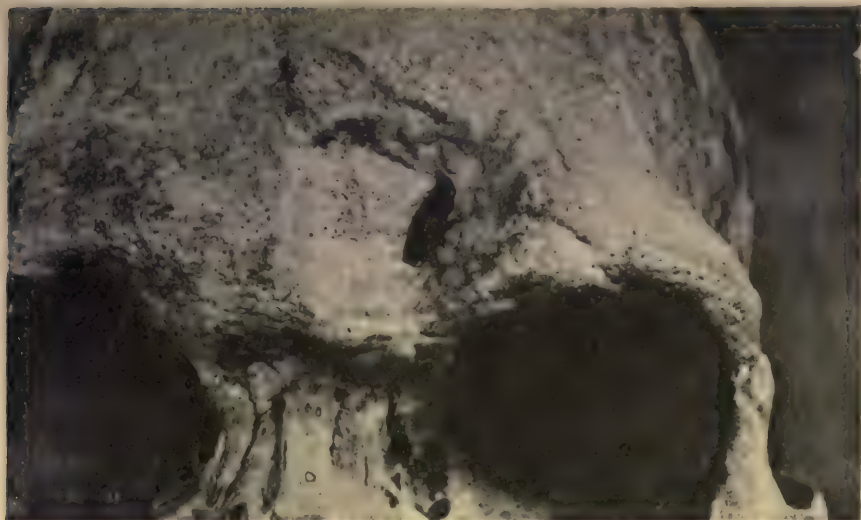


b

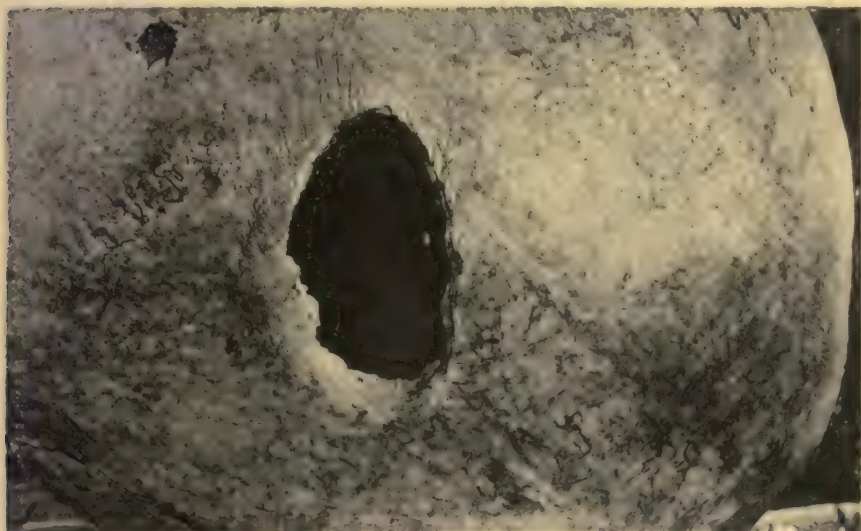


c

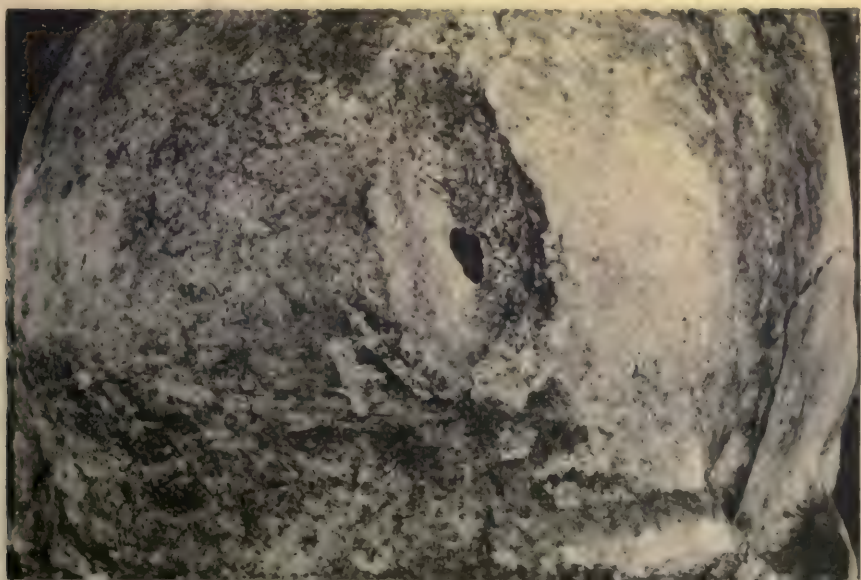
3. SKULL OF TIGHAN, OF OLOLAI, IN NEW IRELAND: OPERATION TO CURE HEADACHE.



2. SKULL OF TORORUKE: SHOWING SUBSEQUENT GROWTH OF NEW BONE.



1. SKULL OF TOARA: SHOWING UNHEALED WOUND WITH FRESH SCRATCHES.





THE RELATIONS BETWEEN MEN AND ANIMALS IN SARAWAK.

BY CHARLES HOSE, Resident of the Baram District, and W. McDougall,
Fellow of St. John's College, Cambridge.

[PRESENTED MAY 28TH, 1901. WITH PLATES XIV, XV.]

WHEN in the year 1898 we travelled together through every part of the Baram District and began to put together the materials for this paper, one of us had already lived for more than fourteen years among the tribes of the district, and by constant observation and inquiry had become familiar with and had written down from time to time careful notes of many of their customs and beliefs. Among these were a large number that showed how all the various tribes hold certain animals and plants in peculiar regard, how the conduct of the people is to a great extent guided by well-established systems of augury, and how their relations to many of the creatures among which they live are regulated by strict rules and prohibitions. We determined, therefore, to make as complete as possible our knowledge of the animal- and plant-superstitions of the various tribes, and believing that by so doing we should find evidence that many of them are survivals from a system of totem-worship now decayed, we kept this possibility constantly in mind. In making these more systematic inquiries we enjoyed the great advantage of being guided in our work by that very considerable mass of information previously collected by one of us with a mind entirely free from preconceived ideas as to what should be expected. We would point out that, since one of us has lived for so long on terms of intimacy and friendship with members of most of the tribes and is familiar with the various languages spoken by them, and since the people seldom showed any reluctance to exhibit and explain their customs to us and were usually pleased to allow us to take part in the ceremonies and rites, a considerable weight, as negative evidence, must be allowed to our failure to find traces of any particular custom or institution.

We shall first describe in some detail all that we have been able to learn of the animal-superstitions of the Kenyahs, the tribe with which we are most familiar. We shall then give a condensed account of similar customs and beliefs as they occur among other tribes of the district, describing more particularly those peculiar to the different tribes, and especially those connected with the "Nyarong" or Spirit-helper of the Sea-Dayaks. We shall conclude with a short discussion of the problems suggested by our observations, the problems of the origin and meaning of the various customs.

THE KENYAHs.

The Kenyahs inhabit a district far inland among the head-waters of the Baram river. According to their own tradition they came into the basin of the Baram from the east some hundred and fifty years ago. From that time until the last few years they, in conjunction with the Kayans, an allied tribe, which seems to have migrated to the Baram a little later than the Kenyahs, had maintained a dominion of terror over all the neighbouring peoples, and they have had extremely little intercourse of a friendly nature with any more civilised folk, whether Malay, Chinese, or European.

At the present time they are settled in village-communities thinly scattered on the banks of the tributaries and upper parts of the Baram river. Each community, consisting of thirty, forty, fifty or more families, lives in a single long house massively built of hewn timber, and raised on great piles of iron-wood twenty or thirty feet above the river bank on which it stands. Each community is ruled over by a chief whose authority is usually very considerable, and in the case of a chief of ability and strong character is always very great. Their principal food is rice, which they cultivate assiduously. Their domestic animals are the pig, the fowl and the dog, and the two former they eat not infrequently. By hunting and fishing they add to the variety of their food, but these pursuits are regarded as sports rather than as means to obtain the necessities of life. They are skilful and artistic handicraftsmen in ironwork, basket-making, wood-carving and rattan-lashing, and they make rude earthen vessels for cooking. Their clothing was chiefly, and still is in many cases, of bark-cloth. Their weapons are the sword and spear and blow-pipe with poisoned darts.

They are an extremely warlike people, and are ever ready to defend themselves against attack or to make war on others, either in following up some blood-feud or in order to secure the human heads that play an essential part in some of their rites.

They believe in a beneficent Supreme Being and in a great number of less powerful spirits. In fact, they may be said to attribute a soul or spirit to almost every natural agent and to all living things, and they pay especial regard to those that seem most capable of affecting their welfare for good or ill. They feel themselves to be surrounded on every hand by spiritual powers, which appear to them to be concentrated in those objects to which their attention is directed by practical needs; adapting a mode of expression familiar to psychologists we may say that they have differentiated from a "continuum" of spiritual powers a number of spiritual agents with very various degrees of definiteness. Of these the less important are extremely vaguely conceived, but are regarded as being able to bring harm to men, who must therefore avoid giving offence to them and must propitiate them if they should by ill-chance have been offended. The more important, assuming individualised and anthropomorphic forms and definite functions, receive proper names, and are in some cases represented by rude images, and become the recipients of prayer and sacrifice. The spirit of any object or

agent, or perhaps we should rather say the thing in its spiritual aspect, is usually denominated by prefixing the word "Balli" to the ordinary name. Thus Balli Sungei (Sungei = river) is the spirit or god of the river, Balli Atap (Atap = roof) is the spirit or god who protects the household from harm of all sorts; a wooden image of him generally stands before the main entrance to the house. Ballingo is the god of thunder; Balli Bouin (bouin = pig) is the form of address to the spirit of any pig about to be sacrificed. More important than any of these is Balli Penyalong, the Supreme Being. To him the Kenyahs pray for guidance in important undertakings, while the women pray to Doh Penyalong, his wife.

The Cult of the Hawk.

Of the many animals that the Kenyahs dare not eat or kill those which most influence their conduct are the omen-birds, and among the omen-birds the common white-headed carrion-hawk (*Haliaster intermedius*) is by far the most important. The Kenyahs always observe the movements of this hawk with keen interest, for by a well-established code of rules, they interpret his movements in the heavens as signs by which they must be guided in many matters of moment, especially in the conduct of warlike or any other dangerous expeditions.¹ The hawk is always spoken of and addressed as Balli Flaki, and is formally consulted before any party of Kenyahs sets out from home for distant parts.

To illustrate the formalities with which they read the omens we will transcribe here a passage from a journal kept by one of us. The occasion of the incidents described was the setting out of a large body of Kenyahs from the house of Tama Bulan, a chief who by his personal merits has attained to a position of great influence among the other Kenyah chiefs, and who has been confirmed in his authority by His Highness the Rajah of Sarawak. The object of the expedition was to visit and make peace with another great fighting tribe, the Madangs, who live in the remotest interior of Borneo. Tama Bulan, whose belief in the value of the omens has been slightly shaken, was willing to start without ceremonies and to make those powers, which he believed to protect us, responsible for himself and his people also. But the people had begged him not to neglect the traditional rites, and he had yielded to their wishes.

"At break of day, before I was up, Tama Bulan was washed by the women at the river's brink with water and the blood of pigs to purify him for his journey, and later in the morning the people set to work to seek omens and a guarantee of their safety on the journey from the hawks that are so numerous here. A small shelter of sticks and leaves was made on the river-bank before the house, and the

¹ We find that the practices of these people in connection with omens or auspices so closely resemble those of the early Romans that it seems worth while to draw attention to these resemblances, and we therefore quote in footnotes some passages from Dr. Smith's *Dictionary of Classical Antiquities*, referring to the practice of the Romans: "in the most ancient times no transaction, whether private or public, was performed without consulting the auspices, and hence arose the distinction of *auspicia privata* and *auspicia publica*."

women having been sent to their rooms, three men of the upper class¹ sat under this leaf-shelter beside a small fire, and searched the sky for hawks. After sitting there silently for about an hour, the three men suddenly became animated; one of them took in his right hand a small chick and a stick frayed by many deep cuts with a knife and waved them repeatedly from left to right, at the same time pouring out a rapid flood of words. They had caught sight of a hawk high up and far away before them, and they were trying to persuade it to fly towards the right. Presently the hawk, a tiny speck in the sky, sailed slowly out of sight behind a hill on the right, and the men settled themselves to watch for a second hawk which must fly towards the left, and a third which must circle round and round. In the course of about half an hour, two hawks had obligingly put in an appearance and behaved just as it was hoped and desired that they should behave; and so this part of this business was finished, and about a score of men bustled about preparing for the next act. They brought many fowls and several young pigs, and a bundle of long poles pointed at either end. Before the house stand upright two great boles of timber, and of either one the upper end is carved into a rude face and crowned with a brass gong (Pl. XIV, 2). These are two images of the one Supreme Being, Balli Penyalong, and they seem to be at the same time the altars of the god. A tall young tree stripped of all but its topmost twigs, stands beside one of them, and is supposed to reach to heaven, or at least, by its greater proximity to the regions above, to facilitate intercourse. As to the meaning of this and many other features of these rites, it is impossible to form any exact idea, for the opinions of these people in such matters are hardly less vague and diversified than those of more civilized worshippers. Tama Bulan, in his character of high priest,² took his stand before one of these images, while a nephew, one of the three men who had watched the hawks, officiated before the other and went through exactly the same ceremonies as his uncle, at the same time with him. Tama Bulan held a small bamboo water-vessel in his left hand and with a frayed stick in his right hand sprinkled some of the water on the image, all the time looking up into its face and rapidly repeating a set form of words. Presently he took a fowl, snipped off its head and sprinkled its blood upon the image, and so again with another and another fowl. Then he held a young pig while a follower gashed its throat, and, as the blood leapt out, he scattered it too on the image, while the score of men standing round about put their hands, some on him, some on one another, so that all were in contact, and joined in the prayer or incantation which he kept pouring forth in the same rapid mechanical fashion ³ in which many a curate at home reads the church service. In the house, meanwhile, four boys were pounding at two big drums to keep away from the worshippers all sounds but the words of their own prayers.³ Then

¹ "No one but a patrician could take the auspices."

² "Romulus is represented to have been the best of augurs, and from him all succeeding augurs received the chief mark of their office."

³ "Hence devices were adopted so that no ill-omened sound should be heard, such as blowing a trumpet during the sacrifice."

another fowl and another pig were sacrificed in similar fashion at either altar, and the second part of the rite was finished by the men sticking the carcasses of the slaughtered beasts each one on the point of a pole, and fixing the poles upright in the earth before the images.

"Tama Bulan now came up into the house to perform the third and last act. A pig was brought and laid bound upon the floor, and Tama Bulan, stooping, with a sword in his right hand, kept punching the pig gently behind the shoulder as though to keep its attention, and addressed it with a rapid flow of words, each phrase beginning 'O Balli Bouin.' The pig's throat was then cut by an attendant, and Tama Bulan, standing up, diluted its blood with water and scattered it abroad over all of us as we stood round about him, while he still kept up the rapid patter of words. Then he pulled off the head of a fowl and concluded the rites by once more sprinkling us all with blood and water. Everyone seemed relieved and well satisfied to have got through this important business and to have secured protectors for all the party during the forthcoming journey. For the three hawks will watch over them and are held to have given them explicit guarantees of safety. The frayed stick that had figured so largely in the rites was stuck under the rafters of the roof among a row of others previously used, and there it will remain, a sign and a pledge of the piety of the people, as long as the house shall stand. And then as Tama Bulan, pretty well covered with blood, went away to wash himself, I felt as though I had just lived through a book of the *Æneid*, and was about to follow Father Æneas to the shores of Latium."

This elaborate rite, so well fitted to set agoing the speculative fancy of anyone acquainted with the writings of Robertson Smith and Messrs. Jevons and Frazer, was one of the first that we witnessed together. After giving all our facts we shall return to discuss some of the interesting questions raised by it, but it will be seen that we are far from having discovered satisfactory explanations of all its features. Obscure features to which we would direct attention are the use of the fire and the frayed stick, for these figure in almost all rites in which the omen-birds are consulted, or prayers and sacrifices made. The Kenyahs seem to feel that the purpose of fire is to carry up the prayers to heaven by means of the ascending flame and smoke, in somewhat the same way as the tall pole planted by the side of the image of Balli Penyalong facilitates communion with the spirit; for they conceive him as dwelling somewhere above the earth.

Omens are always sought in the way we have described before going out to attack an enemy, and if the expedition is successful the warriors bring home not only the heads of the slain enemy but also pieces of their flesh, which they fix upon poles before the house, one for each family, as a thank-offering to Balli Flaki for his guidance and protection. It seldom occurs that a hawk actually takes or eats these pieces of flesh, and that does not seem to be expected. Without favourable omens from the hawks, Kenyahs will not set out on any expedition, and even when they have secured them they still anxiously look out for further guidance and may be stopped or turned back at any time by unfavourable omens. Thus, should a hawk

fly over their boat going in the same direction as themselves this is a good omen, but if one should fly towards them as they travel, and especially if it should scream as it does so, this is a terribly bad omen, and only in case they can obtain other very favourable omens to counteract the impression made by it will they continue their journey. If one of a party dies on the journey, they will stop for one whole day for fear of offending Balli Flaki. If a hawk should scream just as they are about to deliver an attack, that means that some of the elder men will be killed in the battle.

Balli Flaki is also consulted before sowing and harvesting the rice crop, but besides being appealed to publicly on behalf of the whole community, his aid may be sought privately by any man who wishes to injure another. For this purpose a man makes a rough wooden image in human form and retires to some quiet spot on the river bank, where he sets up a "tegulum," a horizontal pole supported about a yard above the ground by a pair of vertical poles. He lights a small fire beside the "tegulum," and taking a fowl in one hand, he sits on the ground behind it so as to see through it a square patch of sky¹ and so waits until a hawk becomes visible upon this patch. As soon as a hawk appears he kills the fowl and with a frayed stick smears its blood on the wooden image, saying, "Put fat in his mouth" (which means "Let his head be taken and fed with fat in the usual way"), and he puts a bit of fat in the mouth of the image. Then he strikes at the breast of the image with a small wooden spear and throws it into a pool of water reddened with red earth, and then takes it out and buries it in the ground. While the hawk is visible he waves it towards the left, for he knows that if it flies to the left he will prevail over his enemy, but that if it goes to the right his enemy is too strong for him.

When a new house is built a wooden image of Balli Flaki with wings extended is put up before it and an offering of mixed food is put on a little shelf before the image, and at times, especially after getting good omens from the hawks, it is offered bits of flesh and is smeared with pig's blood. If the people have good luck in their new house they renew the image, but if not they usually allow it to fall into decay. If when a man is sitting down to a meal he espies a hawk in the heavens he will throw a morsel of food towards it, exclaiming, "Balli Flaki!"

We have seen that during the formal consultation of the hawks the women are sent to their rooms. Nevertheless many women keep in the cupboards in which they sleep a wooden image of the hawk with a few hawk's feathers stuck upon it. If the woman falls sick she will take one of these feathers and waving it to and fro will say, "Tell the bad spirit that is making me sick that I have a feather of Balli Flaki," and when she recovers her health Balli Flaki has the credit of it.

Although Kenyahs will not kill a hawk, they would not prevent us from

¹ "The person who has to take them (the auspices) first marked out with a wand . . . a division of the heavens called 'templum,' . . . within which he intended to make his observations."

shooting one if it stole their chickens, for they say that a hawk who will do that is a low-class fellow, a cad, in fact, for there are social grades among the hawks just as there are among themselves.

Although the Kenyahs thus look to Balli Flaki to guide them and help them in many ways and express gratitude towards him, we do not think that they conceive of him as a single great spirit as some of the other tribes tend to do; they rather look upon the hawks as messengers and intermediators between themselves and Balli Penyalong,¹ to which a certain undefined amount of power is delegated. No doubt it is a vulgar error with them, as in the case of professors of other forms of belief, to forget in some degree the Supreme Being and to direct their prayers and thanks almost exclusively to the subordinate power, which, having concrete forms, they can more easily keep before their minds. They regard favourable omens as given for their encouragement and bad omens as friendly warnings.² We were told by one very intelligent Kenyah that he supposed that the hawks, having been so frequently sent by Balli Penyalong to give them warnings, had learnt how to do this of their own will, and that sometimes they probably do give them warning or encouragement independently without being sent by him.

All Kenyahs hold Balli Flaki in the same peculiar regard, and no individuals or sections of them claim to be especially favoured by him or claim to be related to him by blood or descent.

Other Omen-Birds.

Kenyahs obtain omens of less importance from several other birds. When favourable omens have been given by the hawks some prominent man is always sent out to sit on the river bank beside a small fire and watch and listen for these other birds. Their movements and cries are the signs which he interprets as omens confirming or weakening the import of those given by the hawks. Of these other omens the most regarded are those given by the three varieties of the spider-hunter (*Arachnothera Chrysogenys*, *A. modesta*, and *A. Longirostris*). All three varieties are known as "Sit" or "Isit." When travelling on the river the Kenyahs hope to see "Sit" fly across from left to right as they sit facing the bow of the canoe. When this happens they call out loudly, saying, "O, Sit on the left hand! Give us long life, help us in our undertaking, help us to find what we are seeking, make our enemies feeble." They usually stop their canoes, land on the bank, and after making a small fire, say to it, "Tell Sit to help us." Each man of the party will light a cigarette in order that he may have his own small fire, and will murmur some part at least of the usual formulas. After seeing "Sit" on their left, they like to see him again on their right side.

¹ "It was from Jupiter mainly that the future was learnt, and the birds were regarded as his messengers."

² "The Roman auspices were essentially of a practical nature; they gave no information respecting the course of future events, they did not inform men what was to happen, but simply taught them whether they were to do or not to do the matter purposed; they assigned no reason for the decision of Jupiter, they simply announced—yes or no."

Next in importance to the spider-hunters are the three varieties of the trogan (*Harpactes Diardi*, *H. Duvancelii*, and *H. kasumba*). They like to hear the trogan calling quietly and sitting on a tree to their left, but if he is on their right the omen is only a little less favourable.¹ On hearing the trogan's cry they own it, as they say, by shouting to it and stopping to light a fire just as in the case of "Sit."

Kieng, the woodpecker (*Lepocestes porphyro melas*), has two notes, one of which is of good, the other of bad omen. If they have secured good omens from the birds already mentioned they will then try to avoid hearing Kieng lest he should utter the note of evil omen, so they sing and talk and rattle their paddles on the sides of the boat.

Other omen birds of less importance are Asi (*Carcineutes melanops*), whose note warns them of difficulties in their path, and Ukang (*Sasia abnormis*), whose note means good luck for them. Telajan, the crested rain-bird (*Platylophus coronatus*), announces good luck by its call and warns of serious difficulties also.

Kong, the hornbill (*Anorrhinus comatus*) gives omens of minor importance by his strange deep cry. His handsome feathers, with their bold bars of black and white, are worn on war-coats and stuck in the war-caps by men who are tried warriors, but may not be worn by mere youths. The substance of the beak of the hornbill is sometimes carved into the form of the canine tooth of the tiger-cat, and a pair of these is the most valued kind of ear-ornament for men. Only elderly men or men who have taken heads with their own hands may wear them. One of the popular dances consists in a comical imitation of the movements of the hornbill, but no special significance attaches to the dance; it seems to be done purely in a spirit of fun. Young hornbills are occasionally kept in the house as pets (cf. Plate XIV, 1).

We know of no other bird that plays any part in the religious life of the Kenyahs or affects them in any peculiar manner.

The Pig.

All Kenyahs keep numerous domestic pigs, which roam beneath and about the house, picking up what garbage they can find to eke out the scanty meals of rice-dust and chaff given them by the women. It seems that they seldom or never take to the jungle and become feral, although they are not confined in any way.

These domestic pigs are not treated with any show of reverence, but rather with the greatest contumely, and yet the pig plays a part in almost all religious ceremonies, and before it is slaughtered apologies are always offered to it, and

¹ "It was only a few birds which could give auguries among the Romans. They were divided into two classes, Oscines, those which gave auguries by singing or their voice; and Alites, those which gave auguries by their flight." "There were considerable varieties of omen according to the note of the Oscines or the place from which they uttered the note; and similarly among the Alites, according to the nature of their flight."

it is assured that it is not to be eaten. We have seen that, in the rites preparatory to an important and dangerous expedition, the chief was washed with pig's blood and water, and that young pigs were slain before the altar-post of Balli Penyalong and their blood was sprinkled on the post and afterwards upon all or most of the men of the household. It is probably true that Balli Penyalong is never addressed without the slaughter of one or more pigs, and also that no domestic pig is ever slaughtered without being charged beforehand with some message or prayer to Balli Penyalong which its spirit may carry up to him. But the most important function of the pig is the giving of information as to the future course of events by means of the markings on its liver.¹

Whenever it becomes specially interesting or important to ascertain the future course of events, when for example a household proposes to make war, or two parties are about to go through a peace-making ceremony, a pig is caught by the young men from among those beneath the house, and is brought and laid with its feet lashed together before the chief in the great verandah of the house. And it would seem that the more important the ceremony the larger and the more numerous should be the pigs selected as victims. An attendant hands a burning brand to the chief, and he, stooping over the pig, singes a few of its hairs, and then addressing the pig as "Balli Bouin," and gently punching it behind the shoulder as we have already depicted him, he pours out a rapid flood of words. The substance of his address is a prayer to Balli Penyalong for guidance and knowledge as to the future course of the business in hand and an injunction to the soul of the pig to carry the prayer to Balli Penyalong.

Sometimes more than one chief will address one pig in this way, and then, as soon as these prayers are concluded, some follower plunges a spear into the heart or throat of the pig, and then rapidly opens its belly in the middle line, drags out the liver and lays it on a leaf or platter with the underside uppermost, and so carries it to the chief or chiefs. Then all the elderly men crowd round and consult as to the significance of the appearances presented by the underside of the liver. The various lobes and lobules are taken to represent the various districts concerned in the question on which light is desired, and according to the strength and intimacy of the connections between these lobes, the people of the districts represented are held to be bound in more or less lasting friendship; while spots and nodules in any part betoken future evils for the people of that part, a clean healthy liver means good fortune and happiness for all concerned. The omens thus obtained are held to be the answer vouchsafed by Balli Penyalong to the prayers which have been carried to him by the spirit of the pig.

If the answer obtained in this way from one pig is unsatisfactory they will often kill a second, and on important occasions even a third or fourth in order

¹ "They endeavoured to learn the future, especially in war, by consulting the entrails of victims."

to obtain a favourable answer. Unless they can thus obtain a favourable forecast they will not set out upon any undertaking of importance.

After any ceremony of this kind the body of the pig is usually divided among the people, and by them cooked and eaten without further ceremony. But we have seen that after the ceremony in preparation for an expedition the bodies of the young pigs, whose blood was scattered on the altar-post of Balli Penyalong, were fixed upon tall poles beside this altar-post and there left, and this seems to be the rule in ceremonies of this sort, though it is not clear whether the carcases are left there as offerings to the hawks or to Balli Penyalong, or because they are in some sense too holy to be used as food after being used in such rites.

Probably Kenyahs never give to the spirits in this way the whole body of a large pig, but only of quite small pigs, and in this they are probably influenced by economical considerations.

It may be said generally that Kenyahs do not kill domestic pigs simply and solely for the sake of food. The killing of a pig is always the occasion for, or occasioned by, some religious rite. It is true that on the arrival of honoured guests a pig is usually killed and given to them for food, but its spirit is then always charged with some message to Balli Penyalong. It is said that, when the pig's spirit comes to Balli Penyalong, he is offended if it brings no message from those who killed the pig, and he sends it back to carry off their souls.

On many other occasions also pigs are killed; thus, on returning from a successful attack on enemies a pig is usually killed for each family of the household, and a piece of its flesh is put up on a pole before the house; and during the severe illness of any person of high social standing, pigs are usually killed, and friendly chiefs may come from distant parts bringing with them pigs and fowls that they may sacrifice them, and so aid in restoring the sick man to health. On the death of a chief too a great feast is made, and many pigs are slaughtered, and their jaw bones are hung up on the tomb. A pig is sometimes used in the ceremony by which a newly-made peace is sealed between tribes hitherto at blood-feud, but a fowl is more commonly used.

The wild pig which abounds in the forest is hunted by the Kenyahs, and killed with spears when brought to bay by the dogs, and he is killed and eaten without ceremony or compunction by all classes.

The lower jaws of all wild pigs that are killed are cleaned and hung up together in the house, and it is believed that if these should be lost or in any way destroyed the dogs would cease to hunt.

The Domestic Fowl.

Every Kenyah household has a large number of fowls which compete eagerly with the pigs for the scraps of grain and garbage that fall from the house or paddy-stores.

The sitting hen and the young chickens are always kept in a basket in the house to prevent the chicks or eggs being eaten by pigs or dogs. But

beyond this very little attention is given to them. They are seldom killed for food, and their eggs too can hardly be reckoned as a regular article of food, though the people have no prejudice against eating them.

Fowls are killed on many of the occasions on which pigs are sacrificed, and as we have seen in the description of the ceremony at Tama Bulan's house their blood may be poured upon the altar-posts of Balli Penyalong, and it would seem that fowls and pigs are to some extent interchangeable equivalents for sacrificial purposes. Perhaps the most important occasion on which the fowl plays a part is the performance of the rite by which a blood-feud is finally wiped away. The following extract from the journal previously quoted describes an incident of this kind:—

“In the evening there was serious business on hand. Two chiefs, who some years ago were burned out of their homes in the Rejang district by the government, have settled themselves with their people in the Baram district. They had made a provisional peace with the Kayans some years ago, but the final ceremony was to be performed this evening. The two chiefs of the immigrants, who had remained hitherto in a remote part of the house, seated themselves at one side, and the Kayan chiefs at the other, and Tama Bulan and ourselves between the two parties. First, presents of iron were exchanged. In the old days costly presents of metal-work used to be given, but as this led sometimes to renewed disputes, the government has forbidden the giving of presents of a greater value than two dollars. So now old *parang* (sword) blades are given, and the other essential part of the present has been proportionately reduced from a full-grown fowl to a tiny chick. After much preliminary talking, two chicks were brought, and a bundle of old *parang*-blades which Tama Bulan, in his character of peace-maker, carries with him whenever he travels abroad. A chief of either party took a chick and a *parang* and presented them to the other. Then one led his men a little apart and began to rattle off an invocation beginning ‘O sacred (Balli) chick,’ and then snipped off its head with the *parang*, and with the bloody blade smeared the right arms of his followers as they crowded round him. The old fellow kept up the stream of words until every man was smeared, and then all stamped together on the floor and raised a great shout. Then the other party repeated the performance, and the peace being thus formally ratified we sat down to cement it still further by a friendly drinking bout.”

Another ceremony in which the fowl plays a prominent part is that by which the wandering soul of a sick person is found and led back to his body by the medicine-man.

Such a performance is described in the following extract from the same journal:—

“In the evening we strolled along the great verandah and came upon a soul-catching performance in full swing. In the midst of a crowd of young men sitting in a semi-circle about a small lamp, stood Oyong Ian (a slave whose

merits have raised him to a very good position, but who is not by any means a professional medicine-man). He was chanting loudly with closed eyes, and he was supposed to be unconscious of all that was going on about him. The people talked and came and went, but he took no notice and went on with his chant, the men joining in with a deep-voiced chorus at the end of each phrase. An assistant physician handed to him a war-coat, shield, and *parang*, which he took with a distant air as of one in a half-dream. Then the patients were brought and set in a row on a mat, five children, the eldest a girl of about fourteen years, the youngest a baby in the arms of the anxious mother. One of the children was sick, that is to say, his soul had wandered away towards that other land whither it is destined to travel on the death of the body, and it was Oyong Ian's task to go forth in spirit, to find the wandering soul and to lead it back to the body of the sick child. The other children were not sick, and it seemed a little illogical to have their souls caught when there was no reason to suppose that they were straying, but then, if one must have the doctor to one child, to let him see the other children hardly increases the expense, and they may get some good from the treatment. Oyong took a short wand, and with it sprinkled sugared water on his *parang*, addressing his chant to the weapon and then he sprinkled each child. A young fowl was handed to him and he took it in his right hand and sang, 'O spirit (Balli) of this bird, ask Balli Penyalong to take away all sickness from us and to keep us from all harm.' Then, after waving the feebly protesting bird over the head of each child, chanting the while a formula in antique words whose meaning was unknown to the young man beside me, he snipped off its head and sprinkled its blood on the children. Then he took a second fowl and charged its spirit with prayers to both Penyalong and his wife for the boys and girls respectively, and his song described how his spirit had crossed a great river and had found the wandering souls and was leading them back. Six pieces of specially prepared string were produced by the assistant, and taking one in his right hand he put the finger-tips of that hand on the crown of the head of one of the children (at that moment the child's soul is supposed to pass back into his body through the spot touched); then, as the little fellow held out his arm very solemnly, he tied one of the strings round his right wrist. This process he repeated with each child, the baby resisting violently, but the others all very serious and deeply impressed. The assistant now snipped off the head of the second fowl and with the bloody *parang* Oyong Ian cut short the ends of the strings and smeared a little blood on the arm of each child. Thus the children's souls are tied into their bodies and are not likely to escape again for a long time to come. Lastly, a string was tied round Oyong's wrist by the assistant, a third fowl was killed, and its blood smeared on his arm, and the soul-catching was over. The children were led away and Oyong, still in his trance or dream state, strutted to and fro still chanting, until suddenly he staggered, opened his eyes widely, and then sat down beside me and lit a cigarette in the most every-day sort of way, saying, 'White man's medicine is good, but

Kenyah medicine is good too'; and there was no trace of anything but the most transparent frankness on his honest face."

It will be seen from this account that the fowl, like the pig, is used in many cases as a messenger sent by man to the Supreme Spirit. In most cases when a fowl is slaughtered in the course of a ceremony it is first waved over the heads of the people taking part in it, and its blood is afterwards sprinkled upon them.

In the blood-brotherhood ceremony, when each of the two men drinks or smokes in a cigarette a little of the other's blood drawn with a bamboo-knife, a fowl is in many cases waved over them and then killed, and occasionally a pig also is killed. In such a case the man who has killed the fowl will carry its carcase to the door of the house and there will wave towards the heavens a frayed stick moistened with its blood and announce the facts of the ceremony to Balli Penyalong. So that here again the fowl seems to play the part of a messenger. The carcase and the bloody stick are afterwards put up together on a tall pole before the house. After going through this ceremony a man is safe from all the members of the household to which his blood-brother belongs, and in the case of two chiefs all the members of either household are bound to those of the other by a sacred tie.

Fowls' eggs are sometimes put up on cleft poles as sacrifices. In one instance when we were engaged in fishing a lake with a large party in boats we came upon a row of eight poles stuck upright at the edge of the lake, each cleft at its upper end and holding a fowl's egg. These had just been put there by the crew of one of the canoes as an offering to the crocodiles, which were regarded as the most influential of the powers of the lake and able to ensure us good sport.

In such cases the eggs are probably economical substitutes for fowls, as seems to be indicated by the following facts:—When Kenyah boys enter a strange branch of the river for the first time, they go, each one taking a fowl's egg in his hand, into the jungle with some old man, who takes the eggs, puts them into the cleft ends of poles fixed upright in the earth, and thus addresses all the omen-birds collectively, "Don't let any harm happen to these children who are coming for the first time to this river; they give you these eggs." And sometimes instead of eggs the feathers of a fowl are used, and both the eggs and feathers would seem to be substituted for fowls as being good enough in the case of mere children performing a minor rite.

When the belly of a fowl is opened there are prominent two curved portions of the gut. The state of these is examined in some cases before the planting of paddy, and sometimes before attempting to catch the soul of a sick man. If the parts are much curved it is a good omen; if straight or but slightly curved it is a bad omen.

The Crocodile.

Like all other races of Sarawak, the Kenyahs regard the crocodiles that infest their rivers as more or less friendly creatures. They fear the crocodile and do not like to mention it by name, especially if one be in sight, and refer to it as "the old grandfather." But the fear is rather a superstitious fear than the fear of being seized by the beast. They regard those of their own neighbourhood as more especially friendly, in spite of the fact that members of their households are occasionally taken by crocodiles, either while standing incautiously on the bank of the river or while floating quietly at evening time in a small canoe. When this happens it is believed either that the person taken has in some way offended or injured one or all of the crocodiles, or that he has been taken by a stranger crocodile that has come from a distant part of the river and therefore did not share in the friendly understanding usually subsisting between the people and the local crocodiles. But in any case it is considered that the crocodiles have committed an unjustifiable aggression and set up a blood-feud which can only be abolished by the slaying of one or more of the aggressors. Now it is the habit of the crocodile to hold the body of his victim for several days before devouring it, and to drag it for this purpose into some muddy creek opening into the main river. A party is therefore organized to search all the neighbouring creeks, and the first measure taken is to prevent the guilty crocodile escaping to some other part of the river. To achieve this they take long poles, frayed with many cuts, and set them up on the river bank at some distance above and below the scene of the crime and at the mouths of all the neighbouring creeks and streamlets; and they kill fowls and pray that the guilty crocodile may be prevented from passing the spots thus marked. They then search the creeks, and if they find the criminal with the body of his victim they kill him, and the feud is at an end. But, if they fail to find him thus, they go out on the part of the river included between their charmed poles, and, with their spears tied to long poles, prod all the bed of this part of the river, and thus generally succeed in killing one or more crocodiles. They then usually search its entrails for the bones and hair of the victim so as to make sure that they have caught the offending beast. But even if they do not obtain conclusive evidence of this kind they seem to feel that justice is satisfied and that the beast killed is probably the guilty one.

Except in the meting out of a just vengeance in this way, no Kenyah will kill a crocodile, and they will not eat its flesh under any circumstances. But there is no evidence to show that they regard themselves as related by blood or descent to the crocodiles or that their ancestors ever did so.

When Kenyahs go on a journey into strange rivers or to the lower part of the main river they fear the crocodiles of these strange waters, because they are unknown to them, and any one of them might easily be mistaken by the crocodiles for someone who has done them an injury. Some Kenyahs tie the red leaves of the *Droecina* below the prow of their boat whenever they go far from home, believing that this protects them from all danger of attack by crocodiles.

The Dog.

In all Kenyah houses are large numbers of dogs, which vary a good deal in size and colour, but roughly resemble large, mongrel-bred, smooth-haired terriers. Each family owns several, and they are fed with rice usually in the evening, but seem to be always hungry. The best of them are used for hunting, but besides these there is always a number of quite useless, ill-fed, ill-tempered curs, for no Kenyah dare kill a dog, however much he may wish to be rid of it. Still less, of course, will he eat the flesh of a dog. The dogs prowl about, in and around the house, much as they please, and are not treated with any particular respect, but are rarely kicked or struck. When a dog intrudes where he is not wanted it is usual to click with the tongue at him, and this is usually enough to make him pass on.

One young Kenyah chief, on being questioned, said that the reason they will not kill dogs is that they are like children and eat and sleep together with men in the same house, and he added that if a man should kill a dog he would go mad.

If a dog dies in the house the men push the carcase out of the house and into the river with long poles and will on no account touch it with their hands. The spot on the floor on which the dog died is fenced round with mats for some few days in order to prevent the children walking over it.

It is usual for the Kenyah men to have one or more designs tattooed on their forearms and shoulders. Among the commonest of these designs are those known as the scorpion, the prawn, and the dog. They seem to be conventionalised derivatives from these animal forms. It is said that the dog's head design was formerly much more in fashion than it is at the present time.

Deer and Cattle.

Kenyahs of the upper class will not kill or eat deer and wild cattle. They believe that if they should eat their flesh they would vomit violently and spit out blood. They have no domestic cattle, and the buffalo does not occur in their districts. Lower-class Kenyahs and slaves, taken as war-captives from other tribes, may eat deer and horned cattle, but they must take the flesh some little distance from the house to cook it. A woman who is pregnant, or for any other reason is in the hands of a physician, has to observe the restrictions with regard to deer and cattle more strictly than other people, and she will not touch or allow to be brought near her any article of leather or horn.

The war-coats of the men are often made of goat or deer skin, and any man may wear such a war-coat. But when a man has a young son he is particularly careful to avoid contact with any part of a deer lest through such contact he should transmit to his son in any degree the timidity of the deer. On one occasion when we had killed a deer, a Kenyah chief resolutely refused to allow its skin to be carried in his boat, alleging the above reason.

The cry or bark of the deer (*Cervulus muntjac*) is a warning of danger, and the seeing or hearing of the *plandok* (*Tragulus napu*) has a like significance.

The Tiger-Cat.

The only large species of the *Felidae* that occurs in Borneo is the tiger-cat (*Felis nebulosa*). Kenyahs will not eat it as men of some tribes do, but will kill it, and they fashion its handsome spotted skin into war-coats. Such coats are worn only by men who have been on the warpath. The canine-teeth of the tiger-cat are much prized as ornaments; they are worn thrust through holes in the upper part of the shell of the ear, but only by full-grown men. *Kuleh*, the name of this beast, is sometimes given to a boy.

The true tiger does not now occur in Borneo, and it is doubtful whether it ever was a native of the island. Nevertheless the Kenyahs know it by name (*Linjau*) and by reputation, and a few skins are in the possession of chiefs. No ordinary man but only a distinguished and elderly chief will venture to touch such a skin, much less wear it as a war-coat. These skins have been brought from other lands by Malay traders, and it is probable that whatever knowledge of the tiger the Kenyahs possess has come from the same source.

A chief will sometimes name his son *Linjau*, that is, the Tiger.

A carnivore (*Arctogale leucotis*) allied to the civet cat warns of danger when seen or heard.

Other Animals.

There is a certain large lizard (*varanus*) that is eaten freely by other tribes, but Kenyahs may not eat it, though they will kill it.

They regard the seeing of any snake as an unfavourable omen and will not kill any snake gratuitously.

Kenyahs, like all, or almost all, the other natives of Borneo, are more or less afraid of the *Maias* (the orang-utan) and of the long-nosed monkey, and will not look one in the face or laugh at one.

In one Kenyah house a fantastic figure of the gibbon is carved on the ends of all the main cross-beams of the house, and the chief says that this has been their custom for many generations. He tells us that when these beams are being put up it is the custom to kill a pig and divide its flesh among the men who are working, and no woman is allowed to come into the house until this has been done. None of his people will kill a gibbon, though other Kenyahs will kill and probably eat it. They claim that he helps them as a friend, and the carvings on the beams seem to symbolize his supporting of the house.

In other parts of the same house are carvings of *Semnopithecus Hosei*, but the old chief regards these as much less important and as recent innovations.

We do not know of any other animals to which especial respect or attention is paid by the Kenyahs, and we will now describe the corresponding customs of the Kayans.

THE KAYANS.

Like the Kenyahs, the Kayans seem to have come from the east about 150 years ago, probably a little later than the Kenyahs, and are now settled in

large villages, consisting usually of three or four long houses, on the banks of the Baram about the middle of its course. In the state of their culture and the character of their customs the Kayans closely resemble the Kenyahs. Individually they are less attractive than the Kenyahs and the difference may be described in one word,—there is in the Kenyah character something Hellenic that is wanting in the Kayans. Since the customs of the Kayans in regard to animals are so similar to those of the Kenyahs it will only be necessary to mention those points in which they differ and to bring out some differences in the mental attitude of the Kayans.

Kayans like Kenyahs worship the Supreme Being under the name Laki Tenangan, *i.e.*, Grandfather Tenangan, and the women pray to his wife Do Tenangan. They also reverence a number of departmental deities. Thus there are four gods of life, Buring Katingai, Laki Ju Urip, Laki Makatan Urip, Laki Kalisai Urip, a harvest god Anyi Lawang and Abong Do his wife, a fire-god Laki Pesong, a spirit of madness Balanan, a spirit who causes fear Toh Kiho, the creator of the world Laki Kalira Murei, a god of the waters Orai Uka, and lastly, Laki Jup Urip the deity or spirit who ferries souls across the river of death to Apo Lagan, the Kayan Hades.

The white-headed hawk (Balli Flaki) of the Kenyahs has its equivalent among the Kayans in the large dark-brown hawk, which they call Laki Neho. But as it is not possible to distinguish these two kinds of hawks when seen flying at some distance, they address and accept all large hawks seen in the distance as Laki Neho.

The functions and powers of Laki Neho seem to be almost identical with those of Balli Flaki. He is a giver of omens and a bringer of messages from Laki Tenangan. The following notes of a conversation with an intelligent Kayan chief will give some idea of his attitude towards Laki Neho. It must be remembered that these people have no priesthood and no dogmatic theologians to define and formulate beliefs, so that their ideas as to the nature of their gods and their abodes and powers are, though perhaps more concrete, at least as various in the minds of different individuals as are the corresponding ideas among the average adherents of more highly developed forms of religion; and perhaps no two men will agree exactly on these matters, and any one man will freely contradict his own statements.

Laki Tenangan is an old man with long white hair who speaks Kayan and has a wife, Do Tenangan. They sometimes see him in dreams, and if fortunate they then see his face, but if unlucky they see his back only. In olden times powerful men sometimes spoke with him, but now this never occurs. He dwells in a house far away. Laki Neho also has a house that is covered with palm leaves and frayed sticks. It is in a tree top, yet it is beside a river, and has a landing place before it like every Kayan house. This house is sometimes seen in dreams. It is not so far away as the house of Laki Tenangan. At first our informant said that help is asked directly of Laki Neho, but when pressed he said that Laki Neho

may carry the message to Laki Tenangan. Some things Laki Neho does of his own will and power, for example, if a branch were likely to fall on a Kayan boat he would prevent it, for Laki Tenangan long ago taught him how to do such things. When a man is sick Kayans appeal to Laki Neho, but if he does not make the patient well, they then appeal to Laki Tenangan directly, killing a pig whose spirit goes first to the house of Laki Neho, and then on to the more distant house of Laki Tenangan. For they believe that in such a case the patient has somehow offended Laki Neho by disregarding or misreading his omens. A man suffering from chronic disease may himself pray to Laki Tenangan. He lights a fire and kills a fowl and perhaps a pig also, and calls upon Laki Neho to be his witness and messenger. He holds an egg in one hand and says, "This is for you to eat, carry my message direct to Laki Tenangan that I may get well and live and bring up my children, who shall be taught my occupations and the true customs"; and he will say to Laki Neho, "You I put on the top of my head, when you are with me men look up to me as to a high cliff." The fire is lighted to make Laki Neho warm and energetic.

It will be seen from the above account that the Kayans have formed a concept of the power of the hawks in general, and have given it a semi-anthropomorphic character, and we shall see below that the Sea-Dayaks have carried this process still further.

Crocodiles.

The Kayan's attitude towards the crocodile is practically the same as the Kenyah's. We append the following notes of a conversation with a young Kayan chief, Usong, and his cousin Wan:—There are but very few Kayans who will kill a crocodile except in revenge. But if one of their people has been taken by a crocodile, they go out together to kill the criminal, and they begin by saying, "Don't run away, you've got to be killed, why don't you come to the surface? You won't come out on the land because you have done wrong and are afraid." After this he will perhaps come on to the land, and if he does not he will at least float to the surface of the water and is then killed with spears. In olden days Kayans used to make a crocodile of clay and ask it to drive away evil spirits, but now this is not done. A crocodile may become a man just like themselves. Sometimes a man dreams that a crocodile calls him to become his blood-brother and after they have gone through the regular ceremony and exchanged names (in the dream) the man is quite safe from crocodiles. Usong's uncle has in this way become blood-brother to a crocodile and is now called "Baiya" (the generic name for the crocodile) while some crocodile unknown is called Jok, and Usong considers himself the nephew of the crocodile Jok. Usong's father has also become blood-brother to a crocodile, and Usong calls himself a son of this particular unknown crocodile. Sometimes he asks these two, his uncle- and his father-crocodiles, to give him a pig when he is out hunting, and once they did give him one. After relating this Usong added, "But who knows if this be true?"

Wan's great-great-grandfather became blood-brother to a crocodile, and was

called "Klieng Baiya." Wan has several times met this crocodile in dreams. Thus in one dream he fell into the river when there were many crocodiles about. He climbed on to the head of one which said to him, "Don't be afraid," and carried him to the bank. Wan's father had charms given him by a crocodile and would not on any account kill one, and Wan clearly regards himself as being intimately related to crocodiles in general.

The Kayans regard the pig and the fowl in much the same way as the Kenyahs do, and put them to just the same uses. Their beliefs and customs with regard to deer, horned cattle, dogs and the tiger-cat, are similar to those of the Kenyahs save that they will not kill the last of these. They are perhaps more strict in the avoidance of deer and cattle. One old chief who had been ailing for a long time hesitated to enter the Resident's house because he saw a pair of horns hanging up there. When he entered he asked for a piece of iron and on returning home he killed a fowl and a pig, and submitted to the process of having his soul caught by a medicine-man lest it should have remained in the dangerous neighbourhood of the horns.

Like the Kenyahs the Kayans entertain a superstitious dread of the *Maias* and the long-nosed monkey, but the *Dok* (*Macacus nemestrinus*), the coco-nut monkey of the Malay States, has special relations to them. It is very common in their district and they will kill it only when it is stealing their rice-crop, and they will never eat it as other peoples do. There is a somewhat uncertain belief that it is a blood-relative, and the following myth is told to account for this:—A Kayan woman of high class was reaping paddy with her daughter. Now it is against custom to eat any of the rice during reaping, and when the mother went away for a short time leaving the girl at work she told her on no account to eat any of the rice. But no sooner was the mother gone than the girl began to husk some paddy and nibble at it. Then at once her body began to itch and hair began to grow on her arms like the hair of a *Dok*. Soon the mother returned and the girl said, "Why am I itching so?" and the mother answered, "You have done some wicked thing, you have eaten some rice." Then hair grew all over her body except her head and face, and the mother said, "Ah, this is what I feared, now you must go into the jungle and eat only what has been planted by human hands." So the girl went into the jungle and her head became like a *Dok's* and she ceased to be able to speak.

The *Dok* does not help them in any way but only spoils their crops.

A very popular dance is the *Dok* dance, in which a man imitates very cleverly the behaviour of the *Dok*. It is a very ludicrous performance, and excites boisterous mirth. They say it is done merely in fun.

In one Kayan house the ends of all the main cross-beams that support the roof are ornamented with fretwork designs which are clearly animal derivatives and apparently all of the same animal. Its form suggests a crocodile, and some of the men agreed that that was its meaning, while others asserted that it was a dog. It was doubtless originally one or other of these, but

has now become a conventional design merely, and its true origin has been forgotten (cf. Plate XV, 1).

Neither Kayans nor Kenyahs make much use of snakes of any kind, but there is one snake with red head and tail which, when they see it in the course of a journey, they must kill, else harm will befall them. And again if they see a certain snake just as they are about to enter a strange river or a strange village they will stop and light a fire on the bank in order to communicate with Laki Neho. Kayans will not eat any species of turtle or tortoise.

KALAMANTANS.

The Kalamantans is the name by which we propose to denote the people of the scattered communities that seem to be descendants of the tribe that inhabited the interior of the Baram district at the time when the Kenyahs and Kayans first invaded it from the eastward. Their general modes of life and thought are very similar to those of the Kayans and Kenyahs, especially those of the latter, but they present a greater variety of customs than either of those tribes, owing no doubt to their widely scattered distribution. We will describe the main points of interest in which their relations to the animals differ from those of the Kenyahs and Kayans.

The following notes of a conversation with the Orang Kaya Tummonggong, the distinguished chief of the Long Pata people (one of the many groups of Kalamantans), show that these people regard the hawk in much the same way as the Kenyahs do:—The hawk, "Balli Flaki," is the messenger of "Balli Utong" the Supreme Being. When a party is about to set out on any expedition, they explain their intentions to Balli Flaki and then observe the movements of the hawks. If a hawk circles round over their heads some of the party will fall sick on the journey and probably die. If the hawk flies to the right when near at hand it is a good omen, but if it flies to the right when at a distance or to the left, whether near or far, that is a bad omen. The people then light a fire and entreat the hawk to give a more favourable sign, and if it persists in going to the left they give up the expedition. If while the omens are being read the hawk flaps his wings, or screams, or swoops down and settles on a tree the omens are bad. But if it swoops down and up again that is good. If two or three hawks are visible at the same time, and especially if they all fly to the right that is very good, but if many are visible and especially if they fly off in different directions that is very bad, for it means that the enemy will scatter the attacking force. If the hawk should capture a small bird while they are watching it, that means that they will be made captives if they persist in their undertaking. The hawk is not claimed as a relative by Kalamantans. They take omens from various other birds in matters of minor importance.

Kalamantans use the domestic pig and fowl as sacrificial animals just as the Kenyahs and Kayans do, and they have the same superstitious dread of

killing a dog. One group of them, the Malanaus, use a dog in taking a very solemn oath, and sometimes the dog is killed in the course of this ceremony. Or instead of the dog being killed, its tail may be cut off, and the man taking the oath licks the blood from the stump, and this is considered a most binding and solemn form of oath. The ceremony is spoken of as "makan asu," i.e., "the eating of the dog."

Most Kalamantans will kill and eat deer and cattle freely. But there are exceptions to this rule. Thus Damong, the chief of a Malanau household, together with all his people, will not kill or eat the deer *Cervulus muntjac*, alleging that an ancestor had become a deer of this kind, and that, since they cannot distinguish this incarnation of his ancestor from other deer, they must abstain from killing all deer of this species. We know of one instance in which one of these people refused to use again his cooking-pot which a Malay had borrowed and used for cooking the flesh of this deer. This superstition is still rigidly adhered to, although these people have been converted to Islam of recent years.

On one occasion another chief resolutely refused to proceed on a journey through the jungle when a mouse deer (*Plandok*) crossed his path, and he will not eat this deer at any time.¹

The people of Miri, who also are Mohammedan Malanaus, claim to be related to the large deer (*Cervus equinus*) and some of them to the muntjac deer also. Now these people live in a country in which deer of all kinds abound, and they always make a clearing in the jungle around a tomb. On such a clearing grass grows up rapidly, and so the spot becomes attractive to deer as a grazing ground; and it seems not improbable that it is through frequently seeing deer about the tombs that the people have come to entertain the belief that their dead relatives become deer or that they are in some other way closely related to the deer.

The Bakongs, another group of Malanaus, hold a similar belief with regard to the bear-cat (*Artictis*) and the various species of *Paradoxurus*, and in this case the origin of the belief is admitted by them to be the fact that on going to their graveyards they often see one of these beasts coming out of a tomb. These tombs are roughly constructed wooden coffins raised a few feet only from the ground, and it is probable that these carnivores make their way into them in the first place to devour the corpse, and that they then make use of them as lairs.

The relations of the Kalamantans to the crocodiles seem to be more intimate than those of other tribes. One group, the Long Patas, claim the crocodile as a relative. The story goes that a certain man named Silau became a crocodile. First he became covered with itch, and he scratched himself till he bled and became rough all over. Then his feet began to look like a crocodile's tail, and as the change crept up from his feet to his body he called out to his relatives that he was

¹ Of the Romans it is said: "When a fox, a wolf, a serpent, a horse, a dog, or any other kind of quadruped ran across a person's path or appeared in an unusual place, it formed an augury."

becoming a crocodile, and made them swear that they would never kill any crocodile. Many of the people in olden days knew that Silau became a crocodile because they saw him at times and spoke to him, and his teeth and tongue were always like those of a man. Many stories are told of his meeting with people by the river-side. On one occasion a man was roasting a pig on the river-bank, and when he left it for a moment Silau took it and divided it among the other crocodiles, who greatly enjoyed it. Silau then arranged with them that he would give a sign to his human relatives by which the crocodiles might always be able to recognize them when travelling on the rivers. He told his human friends that they must tie leaves of the *Draccena* below the bows of their boats, and this they always do when they go far from home, so that the crocodiles may recognise them and so abstain from attacking them.

If a man of the Long Patas is taken by a crocodile they attribute this to the fact that they have intermarried to some extent with Kayans. When they come upon a crocodile lying on the river-bank they say, "Be easy, grandfather, don't mind us, you are one of us." Some of the Kalamantans will not even eat anything that has been cooked in a vessel previously used for cooking crocodile's flesh, and it is said that if a man should do so unwittingly his body would become covered with sores.

If a crocodile is seen on their left hand by Long Patas on a war expedition that is a bad omen, but if on their right hand that is the best possible omen.

The Orang Kaya Tummonggong tells us that in the olden times the crocodiles used to speak to his people, warning them of danger, but that now they never speak, and he supposes that their silence is due to the fact that his people have intermarried with other tribes. The Long Patas frequently carve a crocodile's head as the figure-head for a war canoe.

The Batu Blah people (Kalamantans) on returning from the war-path make a huge effigy of a crocodile with cooked rice, and put fowl's eggs in its head for eyes and bananas for teeth, and cover it with scales made from the stem of the banana plant. When all is ready it is transfixed with a wooden spear and the chief cuts off its head with a wooden sword. Then pigs and fowls are slaughtered and cooked and eaten with the rice from the rice-crocodile, the chiefs eating the head and the common people the body. The chief of these people could give us no explanation of the meaning of this ceremony; he merely says they do it because it is "adat" (custom).

One community of Kalamantans, the Lelak people, lived recently on the banks of a lake much infested with crocodiles. Their chief had the reputation of being able to induce them to leave the lake. To achieve this he would stand in his boat waving a bundle of charms, which included among other things teeth of the real tiger and boars' tusks, and then address the crocodiles politely in their own language. He would then allow his boat to float out of the lake into the river, and the crocodiles would follow him and pass on down the river.

Many, probably all, Kalamantans put up wooden images of the crocodile

before their houses, and many of them carve the prow of their war-canoes into the form of a crocodile's head with gaping jaws.

THE PUNANS.

We regard the Punans as being in all probability closely allied on the one hand to the group of tribes which we have called the Kalamantans and to the Kenyahs on the other, but their mode of life and general customs are so different from those of the other peoples that we describe them separately here. They are a nomadic people who build no permanent houses of any kind and do not cultivate rice, and they live by hunting and gathering of wild fruits and jungle produce such as camphor, which they exchange for rice, salt, and iron with the people of other tribes. Since their mode of life is so very much more primitive than that of the other tribes, we hoped that their relations to the animals might throw light upon the significance of many customs that we have described above. In this respect what we have been able to learn of the Punan beliefs and customs is disappointing, but it must be confessed that our failure to discover any particular belief or custom is, in their case, of far less value as negative evidence than in the case of any of the other tribes, because the Punans are very timid and reserved people; and we have little doubt that much remains to be learnt of their customs and beliefs. We hope to be able to complete our account of them at some future date.

Punans reverence the Supreme Being as the Kenyahs do, and they address him as Balli Lutong. They have similar ideas with regard to the soul of man and its behaviour and destination after the death of the body, and like all the other peoples they believe themselves to be surrounded by spirits which may be hurtful to them. Their medicine men are sometimes called in by people of other tribes, and enjoy a high reputation.

The Punans make use of all the omen-birds that are used by the Kenyahs, and they regard them as in some degree sacred, and not to be killed and eaten. They seem to read the omens in much the same way as the Kenyahs do, but they are not so constant in their cult of the omen-birds, and Punans of different districts differ a good deal from one another in this respect. In fact, it is doubtful whether those that have mixed least with the other peoples pay any attention to the omen-birds, and it seems not unlikely that the cult of the omen-birds is in process of being adopted by them.

With the exception of these birds there is probably no wild animal of the jungle that the Punans do not kill and eat. They refuse to eat the domestic pig, but this, they say, is because they know nothing of it, it is strange to them. Having no domestic pigs and fowls, they of course do not sacrifice them to their gods, nor do they seem to practise the rite of sacrifice in any form.

They give the names of various animals to their children, and use these names in the ordinary way.

The crocodile seems to be regarded as a god by the Punans—they speak of it as Balli Penyalong. (This, as we have already said, is the name of the Supreme Spirit of the Kenyahs.) They sometimes make a wooden image of it, and hang it before the leaf shelter or hut in which they may be living at any time, and if one of their party should fall ill they hang the blossom of the betel-nut tree on the figure, and the medicine man addresses it when he seeks to call back the wandering soul of his patient.

Punans certainly ascribe significance to the behaviour of a few animals other than those observed by the other peoples. Thus if they see a lizard of any kind upon a branch before the shelter in which they are encamped, and especially if it utters its note, they regard this as a sign that enemies are near.

THE SEA DAYAKS OR IBANS.

These people, who have been a good deal confused with the Land Dayaks (whom we regard as belonging to the group of scattered communities that we have classed together as Kalamantans), we propose to call Ibans in order to avoid this confusion. This name, which means the immigrants, has been given them by the Kayans because they have migrated from the Saribas and Lemanak rivers in the Rejang, and they have adopted it for themselves.¹

They inhabited a small district only at the time of the advent of Sir James Brooke, but since that time they have spread, under the protection of the Sarawak government, over a much wider area, and have made settlements in most of the main rivers of Sarawak. We regard them, for reasons which it would take too long to give here, as people of Malay stock who, like the Malays, have come to Borneo from the west. They have had much more intercourse with Malays, Chinamen, and all the other peoples of the country than have the tribes with which we have hitherto dealt, and they are a very imitative people, readily adopting the fashions, customs, and beliefs of those with whom their roving natures bring them into relations of any kind. The result is that their beliefs and customs are much mixed, and present unusually great inconsistencies and extravagances. Since, then, we regard the customs of the Ibans as of less anthropological value than those of the tribes with which we have dealt above, and since various writers have already described many of them at length, we shall describe in this paper only some features of their animal superstitions that seem to us especially interesting.

The Ibans do not seem to have any conception that corresponds closely to the Supreme Spirit of the races with which we have already dealt. Archdeacon Perham² has given an account of the Petara of these people, showing how it is a conception of one god having very many manifestations and functions, each special function being conceived vaguely as an anthropomorphic deity. He has described

¹ We believe that Dr. A. C. Haddon also proposes to use the name Iban for these people.

² *Journ. of Straits Asiatic Society*, Nos. 8, 10, and 14.

also the mythical warrior-hero and demi-god Klieng, and the god of war, Singalang Burong. As Archdeacon Perham has said, this last deity has a material animal form, namely, the white-headed hawk, which is the Balli Flaki of the Kenyahs, and plays a somewhat similar part in their lives. But Singalang Burong is decidedly more anthropomorphic than Balli Flaki and is probably generally conceived as a single being of human form living in a house such as the Ibans themselves inhabit; whereas Balli Flaki, even if sometimes conceived in the singular as the great Balli Flaki, is very bird-like. We have seen that the Kayans describe their hawk-god, Laki Noho, as dwelling in a house, which, though in the top of a tree, has a landing-stage before it on the river-bank. In the case of the Kayans the conception is only half-way on the road to a full anthropomorph, whereas with the Ibans the change has been completed and the hawk-god is completely anthropomorphic. And corresponding with this increased importance and definition of the anthropomorphic hawk-god, we find that for the Ibans the virtue has departed out of the individual hawks and they are no longer consulted for omens, for they say that Singalang Burong never leaves his house, and therefore they do not take omens from the hawks when going on the warpath. Nevertheless, he is the chief or ruler over all the other omen-birds, who are merely his messengers. He thus seems to have come to occupy almost the position of Balli Penyalong among the Kenyahs. The following notes are the statements made upon this subject by a very intelligent Iban of the Undup district:—Once a year they make a big feast for Singalang Burong and sing for about twelve hours, calling him and Klieng and all the Petara to the feast. (This is the ceremony known as Gawai Burong. It is a most tedious and monotonous performance after the first few hours.) Singalang Burong in older days used to come to these feasts in person as a man just like an Iban in appearance and behaviour. At the end of the feast he would go out, take off his coat, and fly away in the form of the white-headed hawk. Now they are not sure that he comes to their feast, because they never see him. Singalang Burong is greater than Klieng, although it is Klieng that gives them heads in war. Singalang Burong married an Iban woman, Kachimdai Lanai Pantak Girak, and he gave all his daughters in marriage to the omen-birds. Dara Inchin Tembaga Monghok Chelabok married Katupong (*Sasia abnormis*), Dara Selaka Ulih Nujut married Manbuus (*Carkurentis*), Pingai Tuai Nadai Mertas Indu Moa Puchang Penabas married Bragai (*Harpactes*), Indu Langgu Katungsong Ngumbai Dayang Katupang Bungah Nketai married Papan (*Harpactes diardi*), and lastly Indu Bentok Tinchin Mas Ndu Pungai Lelatan Pulas married Kotok (*Lepocestes*). He had also one son, Agi Melieng, etc., who married the daughter of Pulang Gana, the god of agriculture, her name being Indu Kachanggut Rumput Melieng Capien.

It was amusing and instructive to hear this Iban rattle off these enormous names without any hesitation, while another Iban sitting beside him guaranteed their accuracy.

In the olden days, it is said, there were only thirty-three individuals of each

kind of omen-bird (including Singalang Burong). But although these thirty-three of each kind still exist, there are many others which cannot be certainly distinguished from them, and these do not give true omens. It would be quite impossible to kill any one of these thirty-three true representatives of each kind, however much a man might try.

Nevertheless, if an Iban kills an omen-bird by mistake, he wraps it in a piece of cloth and buries it carefully in the earth, and with it he buries rice and flesh and money, entreating it not to be vexed and to forgive him because it was all an accident. He then goes home and will speak to no one on the way, and stays in the house for the rest of that day at least.

The Ibans read omens not only from the birds mentioned above as the sons-in-law of Singalang Burong, but also from some other animals. And it is interesting to note that they have made a verb from the substantive "burong," a bird, namely, "beburong," to bird, *i.e.*, to take omens of any kind, whether from bird or beast. An excellent account of the part played by omens in the life of the Ibans has been given by Archdeacon Perham in the paper referred to above, and we have nothing further to add to that account.

The hornbill must be included among the sacred birds of the Iban, although it does not give omens. On the occasion of making peace between hostile tribes, the Ibans sometimes make a large wooden image of the hornbill and hang great numbers of cigarettes upon it, and these are taken from it during the ceremony and smoked by all the men taking part in it. On the occasion of the great peace-making at Baram in March, 1899, at which thousands of Kenyahs, Kayans, Kalamantans, and Ibans were present, the Ibans made an elaborate image of the hornbill some nine feet in height and hung upon it many thousands of cigarettes, and these were smoked by the men of the different tribes with apparently full understanding of the value of the act.

A special deity, Pulang Gana, presides over the rice-culture of the Ibans, but the crocodile also is intimately concerned with their rice-culture. The following account was given us by an intelligent Iban from the Batang Lupar:—

Klieng first advised the Ibans to make friends with Pulang Gana, who is a Petara and the grandfather ("aki") of paddy. Pulang Gana first taught them to plant paddy and instructed them in the following rites:

On going to a new district Ibans always make a life-size image of a crocodile in clay on the land chosen for the paddy-farm. The image is made chiefly by some elderly man of good repute and noted for skilful farming. Then for seven days the house is "mali," *i.e.*, under special restrictions—no one may enter the house or do anything in it except eat and sleep. At the end of the seven days they go to see the clay crocodile and give it cloth and food and rice-spirit and kill a fowl and a pig before it. The ground round about the image is kept carefully cleared and is held sacred for the next three years, and if this be not done there will be poor crops on the other farms. When the rites are duly performed this clay crocodile

destroys all the pests which eat the rice. If in a district where Ibans have been long settled the farm-pests become very noxious, the people pass three days "mali" and then make a tiny boat of bark, which they call "utap" (a shield). They then catch one specimen of each kind of pest—one sparrow, one grasshopper, etc.—and put them into the small boat together with all they need for food and set the boat free to float away down the river. If this does not drive away the pests they then resort to the more thorough and certainly effectual process of making the clay crocodile.

Many Ibans claim the live crocodile as a relative, and like almost all the other peoples will not eat the flesh of crocodiles nor kill them, save in revenge when a crocodile has taken one of their household. They say that the spirit of the crocodile sometimes becomes a man just like an Iban, but better and more powerful in every way, and sometimes he is met and spoken with in this form.

Another reason given for their fear of killing crocodiles is that Ribai, the river-god, sometimes becomes a crocodile; and he may become also a tiger or a bear. Klieng too, may become any one of five beasts, namely, the python, the maias, the crocodile, the bear, or the tiger, and it is for this reason that Ibans will not kill these animals. For if a man should kill one which was really either Ribai or Klieng he would go mad.

The Ibans are by nature a less serious-minded and less religious people than the Kenyahs and Kayans, and they have a greater variety of myths and extravagant superstitions; nevertheless, they use the fowl and the pig as sacrificial animals in much the same way as the other tribes. They eat the fowl and both the wild and domestic pig freely, except in so far as they are restrained by somewhat rigid notions of economy in such matters. The fowl plays a larger part than the pig in their religious practices, and its heart is sometimes consulted for omens. Ibans will kill and eat all kinds of deer, but there are exceptions to this rule. The deer are of some slight value to them as omen-givers. Horned cattle they will kill and eat, but they are not accustomed to the flesh of them, and most do not relish it.

Ibans have numerous animal fables that remind one strongly of Æsop's fables and the Brer Rabbit stories of the Africans. In these "Tekora" the land-tortoise and "pelandok," the tiny mouse-deer, figure largely as cunning and unprincipled thieves and vagabonds that turn the laugh always against the bigger animals and man.

The "Nyarong" or Spirit-helper.

An important institution among the Ibans, which occurs but in rare instances among the other peoples, is the "Nyarong" or Spirit-helper. The "Nyarong" is one of the very few topics in regard to which the Ibans display any reluctance to speak freely. So great is their reserve in this connection that one of us lived for fourteen years on friendly terms with Ibans of various districts without ascertaining the meaning of the word "Nyarong" or suspecting the great importance of the part played by it in the lives of many of these people. It

seems to be usually the spirit of some ancestor or dead relative, but not always so, and it is not clear that it is always conceived as the spirit of a deceased human being. This spirit becomes the special protector of some individual Iban, to whom in a dream he manifests himself, in the first place in human form, and announces that he will be his "Nyarong," and apparently he may or may not inform the dreamer in what form he will appear in future. On the day after such a dream the Iban wanders through the jungle looking for signs by which he may recognize his "Nyarong," and if an animal behaves in a manner at all unusual, if a startled deer stops a moment to gaze at him before bounding away, if a gibbon gambols about persistently in the trees near him, if he comes upon a bright quartz-crystal or a strangely contorted root or creeper, that animal or object is for him full of a mysterious significance and is the abode of his "Nyarong." Sometimes the "Nyarong" then assumes the form of an Iban and speaks with him, promising all kinds of help and good fortune. If this occurs the Iban usually faints away, and when he comes to himself again the "Nyarong" will have disappeared. Or, again, a man may be told in his dream that if he will go into the jungle he will meet his "Nyarong" as a wild boar. He will then of course go to seek it, and if by chance other men of his house should kill a wild boar that day he will go to them and beg for its head or buy it at a great price if need be, carry it home to his bed-place, offer it cooked rice and kill a fowl before it, smearing the blood on the head and on himself and humbly begging for pardon. Or he may leave the corpse in the jungle and sacrifice a fowl before it there. On the following night he hopes to dream of the "Nyarong" again, and perhaps he is told to take the tusks from the dead boar and that they will bring him good luck. Unless he dreams something of this sort he feels that he has been mistaken and that the boar was not really his "Nyarong."

Perhaps only one in fifty or a hundred men is fortunate enough to have a "Nyarong," though all ardently desire it. Many a young man goes out to sleep on the grave of some distinguished person or in some wild and lonely spot and lives for some days on a very restricted diet, hoping that a "Nyarong" will come to him in his dreams.

When, as is most commonly the case, the "Nyarong" takes on the form of some animal, all individuals of that species become objects of especial regard to the fortunate Iban, and he of course will not kill or eat any such animal, and he will as far as possible restrain others from doing so. A "Nyarong" may change the form in which it manifests itself, but even then the Iban will continue to respect the animal-form in which it first appeared.

In some cases the cult of a "Nyarong" will spread through a whole family or household. The children and grandchildren will usually respect the species of animal to which a man's "Nyarong" belongs and perhaps sacrifice fowls or pigs to it occasionally. But it does not do anything for them; whereas it is asserted that, if the great-grandchildren of a man behave well to his "Nyarong," it will often befriend them just as much as its original *protégé*.

The above general account of the "Nyarong" is founded on the descriptions of many different Ibans, and we will now supplement it by describing several particular instances.

Angus (a Batang Lupar Iban) says that every Iban who has no "Nyarong" hopes to get some bird or beast as his helper at the "begawai," the feast given to the Petara. He himself has none, but he will not kill the gibbon because the "Nyarong" of his grandfather, who died twenty years ago, was a gibbon. Once a man came to his grandfather in a dream and said to him, "Don't you kill the gibbon," and then turned into a grey gibbon. This gibbon helped him to become rich and to take heads and in all possible ways. On one occasion when he was about to go on the warpath his "Nyarong" came to him in a dream and said, "Go on, I will help you," and the next day he saw in the jungle a grey gibbon which was undoubtedly his "Nyarong." When he died he said to his sons, "Don't you kill the gibbon," and his sons and grandsons have obeyed him in this ever since. Angus adds that when a man dreams of a "Nyarong" for the first time he does not believe it and will still kill animals of that kind; nor is a second dream enough, but when he dreams the same dream a third time, then his scepticism is overcome and he can no longer doubt his good fortune.

Angus himself once shot a gibbon when told to do so by one of us. He first said to it, "I don't want to kill you, but the Tuan who is giving me wages expects me to, and the blame is his. But if you are really the 'Nyarong' of my grandfather, make the shot miss you." He then shot and missed three times, and on shooting a fourth time he killed a gibbon, but not the one he had spoken to. Angus does not think the gibbon helps either his father or himself.

Payang, an old Katibas Iban, tells us that he has been helped by a python ever since he was a young man, when a man came to him in a dream and said, "Sometimes I become a python and sometimes a cobra, and I will always help you." It has certainly helped him very much, but he does not know whether it has helped his children; nevertheless, he has forbidden them to kill it. He does not like to speak of it, but he does so at our request. Payang concluded by saying that he had no doubt that we white men have "Nyarongs" very much more powerful than the Iban's, and that to them we owe our ability to do so many wonderful things.

Imban, an Iban who had recently moved to the Baram river from the Rejang, had once when sick seen in a dream the Labi-Labi, the large river-turtle (*Trionyx subplanus*), and made a promise that if he should recover he would never kill it. So when he settled on the Baram river as head of a household he attempted to impose a fine on his people for killing the Labi-Labi. They appealed to one of us as the resident magistrate, and it was decided that if Imban wished to insist on this observance he must remove to a small tributary stream. This he has done, and a few of his people have followed him and on them he enforces a strict observance of his cult of the Labi-Labi.

A still more interesting case is the following one:—A community of Ibans were building a new house on the Dabai river some years ago, and one day, while they were at work, a porcupine ran out of a hole in the ground near by. During the following night one of the party was told by the porcupine in a dream to join their new house with his (the porcupine's). So they completed their house, and ever since have made yearly feasts in honour of the porcupines that live below the house, and no one in the house dare injure one of them, though they will still kill and eat other porcupines in the jungle. They have had no death in the house during the seven years that it has been built, and this they attribute to the protecting power of the porcupines, and when anyone is sick they offer food to them and regard their good offices as far more important than the ministrations of the "manang," the medicine man. Last year some relatives of these Ibans moved to this village, and for three months the knowledge of the part played by the porcupines was hid from them as a mysterious secret. At the end of that time this precious mystery was disclosed to the new-comers, and the porcupines were feasted with every variety of cooked rice, some of it being made into a rude image of a porcupine, and with rice-spirit and cakes of sugar and rice-flour, salt and dried fish, oil, betel-nut, and tobacco. Several fowls were slain, and their blood was daubed on the chin of each person in the house. The heart of one fowl was carefully taken out and put with the food offered to the porcupines, that they might read the omens from it, and they were then informed of the arrival of the new-comers. The fowls were waved over the heads of the people by the old men while they prayed the porcupines to give them long life and health and a token of their goodwill in the form of a smooth, rounded pebble. On an occasion of this sort it is highly probable that the required token will be found, for the spirit-helper would no doubt be surreptitiously helped by some member of the household who, being deficient in faith, prefers to make a certainty of so important a matter rather than leave it entirely to the "Nyarong."

CONCLUSION.

We have now to discuss some problems suggested by a review of the facts set forth above and to bring forward a few additional facts that seem to throw light on these questions.

The question that we will first discuss in this—Are all or any of the instances of peculiar regard paid to animals, or of animals sacrificed to gods or spirits, or of the ceremonial use of their blood, to be regarded as institutions surviving from a fully developed system of totem-worship now fallen into decay? It will have been noticed that a large number of the features of totem-worship, as it occurs in its best developed forms, occur among the people of one or other of the tribes of Sarawak. We have in the first place numerous cases in which a whole community refuses to kill or eat an animal which is believed to protect and aid them by omens and warnings and in other ways, and in which the animal is worshipped

with prayer and sacrifice (the hawk among various tribes); we have at least one instance of a community claiming to be related to a friendly species (Long Patas and the crocodile), and having as usual an extravagant myth to account for the belief; we have the domestic animal that is sacrificially slain, its blood being sprinkled on the worshippers and its flesh eaten by them, and that is never slain without religious rites (pig of the Kenyahs and Kayans); we have the animal that must not be killed tattooed on the skin of the men (the dog), or its skin worn by fully grown men only (the tiger-cat), or images of it made of clay or carved in wood and set up before the house (the hawk and crocodile); we have the animal that is claimed as a relative imitated in popular dances (the Dok-monkey of the Kayans), the belief that the souls of men assume the form of some animal that must not be killed or eaten (deer and the arctogale among Kalamantans), the observance by invalids of a very strict avoidance of contact with any part of an animal that must not be killed or eaten in any case (horned cattle among Kenyahs and Kayans).

Not only do we see these various customs, that in other parts of the world have been observed as living elements of totem-worship, and that in other parts have been accepted as evidence of totem-worship in the past, but in the agricultural habits of the people we may see an efficient cause of the decay of totem-worship if at some time in the past it has flourished among them. For it has been pointed out, especially by Mr. Jevons in his *Introduction to the History of Religion*, that totemism seems to flourish most naturally among tribes of hunters, and that the introduction of agriculture must tend towards its decay. Now there is some reason to suppose that the introduction to Borneo of rice and of the art of cultivating it is of comparatively recent date. Crawford reckoned that the cultivation of paddy was introduced to the southern parts of Borneo from Java some three hundred years ago, and into the northern parts from the Philippine Islands about one hundred and fifty years ago. But whatever the date of the occurrence may have been, it seems to be certain that, by the introduction of paddy-cultivation from some other country, most of the tribes of Sarawak were converted, probably very rapidly, from hunting to agriculture. This conversion must have caused great changes in their social conditions and in their customs and superstitions, and if totemism flourished among them while they were still simple hunters, its decay may well have been one of the chief of these changes.

A second factor that would have tended to bring about this change is the prevalence of a belief in a god or beneficent spirit more powerful than all others and more directly concerned with the welfare of his worshippers, however this belief may have come into being. And a third factor that may have tended in the same direction is the custom of head-hunting, and the important part played by the heads in the religious life of the people. For there is some reason to think that head-hunting is a comparatively young institution among the tribes of Sarawak.

But in spite of all this and although we do not think it is possible completely to disprove the truth of this hypothesis, we are inclined to reject it. We are led to do so by four considerations. In the first place, if by totemism we mean a social organisation consisting in the division of a people into groups or clans, each of which worships or holds in superstitious regard one or more kinds of animal or plant or other natural objects to which the members of the group claim to be related by blood or by descent, then it seems to us sufficiently wonderful that this system should have existed among peoples so remote from one another in all things, save certain of the external conditions of life, as the Indians of North America and the indigenes of Australia. And it seems to us that to invoke the aid of the hypothesis of totemism in the past to explain the existence of a set of animal or plant superstitions in any particular case is but to increase the mystery that shrouds their origin; for unless it can be shown that the adoption or development of totemism by any people brings with it immense advantages for them in the struggle for existence, every fresh case in which the evidence compels us to admit its occurrence, whether in the past or as a still flourishing institution, can but increase the wonder with which we have to regard its wide distribution.

Secondly, we have in the total absence of totemism among the Punans very strong ground for rejecting the suggestion of its previous existence among the Kenyahs. For in physical characters, in language, and, as far as the difference in the mode of life permits, in customs and beliefs the Punans resemble the Kenyahs so closely that we must assume them to be closely allied by blood, and it seems probable that the Punans have merely persisted in the social condition from which the Kenyahs and other tribes have been raised by the adoption of agriculture and the practice of building substantial houses. Yet, as we have said, the Punans, although in that condition of nomadic hunters which is probably the most favourable to the development and persistence of totemism, observe hardly any restrictions in their hunting, and in fact seem to kill and eat with equal freedom almost every bird and beast of the jungle, shooting them with the blowpipe and poisoned darts with consummate skill. The only exceptions to this rule are, as far as we know, the omen-birds, and as we have said, it seems doubtful whether even these are excepted in the case of Punans who have not had much intercourse with other peoples.

Thirdly, although it may be said that even at the present time many of the features of the religious side of totemism are present, we have not been able to discover any traces of a social organisation based upon totemism. There is no trace of any general division of the people of any tribe into groups which claim specially intimate relations with different animals, except in the case of the Kalamantans; and in their case such special relations seem to be the result merely of the different conditions under which the various scattered groups now live. There are no restrictions in the choice of a wife that might indicate a rule of endogamy or exogamy. There are no ceremonies to initiate youths into tribal mysteries; certain ceremonies in which the youths take a leading part are directed

exclusively to training them for war and the taking of heads in battle. We know of no instance of any group of people being named after an animal or plant which is claimed as a relative and in the case of the more homogeneous tribes, such as the Kenyahs and Kayans, all prohibitions with regard to animals and all benefits conferred by them are shared equally by all the members of any one community and, with but very few exceptions, are the same for all the communities of the tribe.

Lastly, we think it unnecessary to regard the animal superstitions of these tribes as survivals of totemism, because it seems possible to find a more direct and natural explanation of almost every case. The numerous cases seem to fall into two groups, the superstitious practices concerned with the sacrificial animals, the pig and fowl, on the one hand, and all those concerned with the various other animals on the other hand. These latter may, we think, be regarded as the expression of the direct and logical reaction of the mind of the savage to the impression made upon it by the behaviour of the animals.

It has been admirably shown by Professor Lloyd Morgan¹ how we ourselves, and even professed psychologists among us, tend to overestimate the complexity of the mental processes of animals, and there can be no doubt that savages generally are subject to this error in a very much greater degree, that, in fact, they make, without questioning and in most cases without explicit statement even to themselves, the practical assumption that the mental processes of animals, their passions, desires and motives, and powers of reasoning are of the same order as and in fact extremely similar to their own. That the Kenyahs entertain this belief in a very practical manner is shown by their conduct when preparing for a hunting or fishing excursion. If, for example, they are preparing to poison the fish of a section of the river with the "tuba" root, they always speak of the matter as little as possible and use the most indirect and fanciful modes of expression; thus they will say, "There are many leaves fallen here," meaning, "There are plenty of fish in this part of the river." And these elaborate precautions are taken lest the birds should overhear their remarks and inform the fish of their intentions, when of course the fish would not stay to be caught but would swim away to some other part of the river.

Since this belief seems to be common to all or almost all savages and primitive peoples, it would be a strange thing if prohibitions against killing and eating certain animals and various superstitious practices in regard to animals were not practically universal among them.

Bearing in mind the reality of this belief in the minds of these people, it is easy to understand why they should shrink from killing any creature so malignant-looking and powerful for harm as a snake, and why they should feel uneasy in the presence of, and to some extent dread, the maias and the long-nosed monkey, creatures whose resemblance to man seems even to us somewhat uncanny. Their objection to killing their troublesome dogs seems

¹ *Introduction to Comparative Psychology*, and elsewhere.

to be due to a somewhat similar feeling, a recognition of intelligence and emotions not unlike their own, but mysteriously hidden from them by the dumbness of the animals. In the same way it is clear that it is but a very simple and logical inference that the crocodiles are a friendly race, and but the clearest dictate of prudence to avoid offending creatures so powerful and agile; for if they were possessed of the mental powers attributed to them by the imagination of the people, they might easily make it impossible for men to travel upon the rivers and dwell on their banks. A similar process would lead to the prohibition against the eating of the tiger-cat, the only large and dangerous carnivore.

The origin of the prohibitions against killing and eating deer and horned cattle is perhaps not so clear. But it must be remembered that until very recently the only horned cattle known to the tribes of the interior were the wild cattle (the *Saladang* of the Malay peninsula), very fierce and powerful creatures. These wild cattle hide themselves in the remotest recesses of the forests, and as they are but very rarely seen, they may well be regarded as somewhat mysterious and awful. Deer, on the other hand, abound in the forests and like most deer are very timid, and it is perhaps their timidity that has led in some cases to the prohibition against their flesh, for we have seen how a Kenyah chief feared lest his little son, safe at home a hundred miles away, should be infected with the deer's timidity if he should come in contact with the skin of one. In another case we have seen that by the people of one community deer are regarded as relatives or as containing the souls of their ancestors, and that this belief probably had its origin in the fact that deer are in the habit of frequenting the grassy clearings made about the tombs by the people. And we saw that a similar belief in the case of certain carnivores probably had a similar origin.

We think that even the elaborate cult of the hawk and of the other omen-birds is to be explained on these lines. If we think of his erratic behaviour, how he will come suddenly rushing down out of the remotest blue of the sky to hover overhead and then perhaps to circle hither and thither in an apparently aimless manner, or will keep flying on before a boat on the river or come swiftly to meet it screaming as he comes,—if we think of this, it is easy to understand how a people whose whole world consists of dense forests and dangerous rivers, a people extremely ignorant, yet intelligent and speculative and always looking out for signs that shall guide them among the mystery and dangers that surround them, may have come to see in the hawk a messenger sent to them by the beneficent Supreme Being. For this Being is vaguely conceived by them as dwelling in the skies, whence the hawk comes, and whither he so often returns. And then we may suppose that the messenger himself has come to be an object of worship in various degrees with the different tribes, as seems to be the rule in all religions systems in which servants of a deity mediate between him and man.

The origin of the various rites in which the fowl and pig are sacrificed, and their blood smeared or sprinkled on men or on the altar-posts of gods, or on the image of the hawk, and their souls charged with messages to the Supreme Being—the origin of this group of customs must be sought in a different direction.

To anyone acquainted with Robertson Smith's *Religion of the Semites*, and with Mr. Jevons's *Introduction to the History of Religion*, the idea naturally suggests itself that these animals are or were true totems, of which the cult has passed into a late stage of decay. It might be supposed that, being originally totem animals, they thereby became domesticated by their worshippers, that they were occasionally slain as a rite for the renewal of the bond between them and their worshippers, their blood being smeared or sprinkled on the latter, and their flesh ceremonially eaten by them, and that the eating of them has become more and more frequent, until now every religious rite, of however small importance, is made the occasion for the killing and eating of them. It might also be supposed that, with the development or the adoption of the conception of a Supreme Being, the original purpose and character of the rites had become obscure, so that the slaughtered animals are now regarded in some cases as sacrifices offered to the deity.

But we do not think that this tempting hypothesis as to the origin of the rites can be upheld in this case. In the first place the wild pig of the jungle is hunted in sport and killed and eaten freely by all the various tribes, and is, in fact, treated on the whole with less respect and ceremony than perhaps any other animal. Secondly, the domestic pig differs so much from the wild pig that Mr. Oldfield Thomas has pronounced it to be of a different species, and it seems likely that it has been introduced to Borneo by the Chinese at a comparatively recent date. Further, there is reason to suppose that the custom of sacrificing pigs and fowls arose through the substitution of them for human beings in certain rites. For there is a number of rites, of which it is admitted by the people that the slaughter of human beings was formerly a central feature; of these, the most important and the most widely spread are the funeral rites of a great chief, the rites at the building of a new house, and those on returning from a successful war expedition. In all these, fowls or pigs are now substituted as a rule, but we know of instances in which in recent years human beings were the victims. Thus some six years ago, on the death of the chief of a community of Kalamantans (the Orang Bukit), a slave was bought by his son, and a feast was made, and the slave was killed through each man of the community giving him a slight cut with his *parang*. This was said to be the revival of an old and almost obsolete custom. In another recent case, when a mixed party of Kayans and Kenyahs returned from a successful war expedition, only the Kenyahs had secured heads. The Kayans therefore took an old woman, one of the captives, and killed her by driving a long pole against her abdomen, as many of them as possible taking part by holding and helping to thrust the pole. The head was then divided among the parties of Kayans, and pieces of the flesh were hung on poles beside the river, just as is

done with the flesh of slain enemies and with the flesh of the pigs that are always slaughtered on such occasions. It was said that this killing of a human being was equivalent to killing a pig, only much finer.

Kayans tell us that they used to kill slaves at the death of a chief, usually three, but at least one, and that they nailed them to the tomb, in order that they might accompany the chief on his long journey to the other world and paddle the canoe in which he must travel. This is no longer done, but a wooden figure of a man is put up at the head and another of a woman at the foot of the coffin of a chief as it lies in state before the funeral. And a small wooden figure of a man is usually fixed on the top of the tomb, and it is said that this is to row the canoe for the chief. A live fowl is usually tied to this figure, and although it is said to be put there merely to eat the grubs, we think there can be no doubt that we see here going on the process of substitution of fowl for slave.

In building a new house it is customary among almost all these tribes to put a fowl into the hole dug to receive the first of the piles which are to support the house, and to allow the end of the pile to fall upon the fowl so as to kill it. The Kenyahs admit that formerly a girl was usually killed in this way, and there is reason to believe that in all cases a human victim was formerly the rule, and that the fowl is a substitute merely. In the following cases, too, we see the idea of substitution of fowls or pigs for men.

It is customary with the Malanaus of Niah to kill fowls and put them together with eggs on poles in the caves in which the swifts build the edible nests, in order to secure a good crop of nests. One year when the nests were scanty they bought a slave in Brunei and killed him in the cave in the hope of increasing the number of nests.

It was formerly the custom to exact a fine of one or more slaves as punishment for certain offences, *e.g.*, the accidental setting fire to a house. At the present time, when slaves are scarcer than of yore, slaves are rarely given in such cases, but usually brass gongs, always accompanied by a pig.

Now when slaves were killed and nailed to the tomb of a chief the purpose was perfectly clear and simple. It was done in just the same spirit in which the weapons and shield and clothing are still always hung on the tomb of a deceased warrior in order that his soul may not be without them on the journey to the other world. On the introduction of the domestic pig it may well have become customary for the poorer classes, who could not afford to kill a slave, or for families which owned no slaves, to kill a pig as in some degree a compensation for the want of human victims. If such a custom were once introduced it may well have spread rapidly from motives of both economy and humanity, for slaves are as a rule very kindly treated by their masters, and in many cases come to be regarded as members of their family.

We may suppose, too, that formerly it was the custom to kill a slave when prayers of public importance were made to the Supreme Being in order that the

soul of the slave might carry the prayer to him. If this was the case, the substitution of pig for slave, on the introduction of the domestic pig, may be even more readily conceived to have become customary, when we remember that these people regard the souls of animals as essentially similar to their own. If such a custom of substitution once gained a footing it would naturally become usual to take the opportunity of communicating with the higher powers whenever a pig was to be slaughtered. This view, that in all sacrifices the pig and fowl are but substitutes for human victims, finds very strong support in the following facts :—The Kalabits, a tribe inhabiting the north-western corner of the Baram district, breed the water-buffalo and use it in cultivating their land. It has probably been introduced to this area from North Borneo at a recent date. The religious rites of these people closely resemble those of the tribes with which we have been dealing above, but in all cases in which pigs are sacrificed by the latter buffaloes are used by the Kalabits.

The rite of sprinkling the blood of pigs and fowls on men and on the altarposts and images may, we think, be an extension or adaptation of the blood-brotherhood ceremony. We have seen that with the Kayans and Kenyahs the essential feature of this ceremony is the drawing of a little blood from the arm of the two men, either of whom then drinks or consumes in a cigarette the blood of the other one. Such a rite calls for no remote explanation ; it seems to have suggested itself naturally to the minds of primitive people all the world over, as a process for the cementing of friendship. When two hostile communities wished to make a permanent peace with one another it would be natural that they should wish to perform a ceremony similar to the rite of blood-brotherhood. But the interchange of drops of blood between large numbers of persons would obviously be inconvenient, and if the idea of substituting fowls and pigs for human victims had once taken root in their minds, it would have been but a small step to substitute their blood for human blood in the peace-making ceremonies. We have seen above (p. 183) that in such a ceremony fowls are exchanged by the two parties, so that the men of either party are smeared with the blood of the fowl originally belonging to the other party. It may be that here, too, the blood of slaves was formerly used, but of this we have no evidence. The custom of smearing the blood of fowls and pigs on the two parties to a friendly compact having been arrived at in this way, the rite might readily be extended to the cases in which the hawk, represented by his wooden image, or the Supreme Being, also represented by an image, is invoked as one of the parties to the compact. We are inclined to think that in some such way as we have here suggested, namely, by the substitution of pigs and fowls for human victims, and of their blood for human blood, the origin of the customs of sacrificing fowls and pigs, and of ceremonially sprinkling their blood, may be explained.

We conclude, then, that the various superstitions entertained by these tribes in regard to animals are not to be looked upon as survivals of totem-worship, but that they may all be explained in a simpler and more satisfactory manner. But

before bringing our paper to an end we would point out that among the facts we have described there are some which seem to suggest a possible and indeed, as it seems to us, a very natural and probable mode of origin of totem-worship. We refer to the varieties of the "Nyarong" of the Ibans and sporadic analogous cases among the other tribes. We have seen that the "Nyarong" may assume the form of some curious natural object or of some one animal, distinguished from its fellows by some slight peculiarity, which receives the attentions of some one man only. In such cases the "Nyarong" is hardly distinguishable from a fetish. In other cases the man, being unable to distinguish the particular animal which he believes to be animated by his "Nyarong," extends his regard and gratitude to the whole species. In such a case it seems difficult to deny the name "individual totem" to the species if the term is to be used at all. In other cases, again, all the members of a man's family and all his descendants, and if he be a chief all the members of the community over which he rules, may come to share in the benefits conferred by the "Nyarong," and in the feeling of respect for and in performing rites in honour of the species of animal in one individual of which it is supposed to reside. In such cases the species approaches very closely the clan-totem in some of its varieties. (In speaking of the "Kobong" of certain natives of Western Australia, Sir G. Grey¹ says, "This arises from the family belief that some one individual of the species is their nearest friend to kill whom would be a great crime, and to be carefully avoided.")

Of similar cases among other tribes of guardian-animals appearing to men in dreams and claiming their respect and gratitude, we must mention the case of Aban Jau, a powerful chief of the Sebops, a sub-tribe of Kenyahs. He had hunted and eaten the wild pig freely like all other Kenyahs, until once in a dream a wild boar appeared to him and told him that he had always helped him in his fighting. Thereafter Aban Jau refused, until the day of his death, to kill or eat both the wild and the domestic pig, although he would still consult for omens the livers of pigs killed by others.

We have described above (p. 190) how a Kayan may become blood-brother to a crocodile in a dream, and may thereafter be called Baiya (crocodile), and how in this way one Kayan chief had come to regard himself as both son and nephew to crocodiles, and how he believed that they brought him success in hunting and carried him ashore when (in a dream) he had fallen into the river. The cousin of this chief, too, regarded himself as specially befriended by crocodiles because his great-grandfather had become blood-brother to one in a dream. So it is clear that the members of the family to which these young men belong are likely to continue to regard themselves as related by blood to the crocodiles and bound to them by special ties of gratitude.

In another case we saw how all the people of one household regard themselves as related to the crocodiles and specially favoured by them, explaining the relation as due to one of their ancestors having become a crocodile. In

¹ Quoted in Mr. Frazer's *Totemism*, p. 8.

another case we saw that some ill-defined relation to the gibbon is claimed by a community of Kenyahs, whose house is decorated with carvings of the form of the gibbon, and whose members will not kill the gibbon. And in yet another case we saw that a Kayan house is decorated with conventionalised carvings of some animal whose species has been forgotten by the community. In each of these last three cases it seems highly probable that the special relation to the animal was established by some such process as we see going on in the preceding case, so that we seem to have in this series of cases one of incipient totemism and others illustrating various stages of decay of abortive beginnings of totemism. And it is easy to imagine how in the absence of unfavourable conditions such beginnings might grow to a fully developed totem-system. For suppose that in any one community there happened to be at one time two or more prosperous families, each claiming to be related with and protected by some species of animal as the result of friendly overtures made by the animals to members of the families in their dreams; it would then be highly probable that members of other families, envious of the good fortune of these, would have similar dream-experiences and so come to claim a similar protection, until very soon the members of any family that could claim no such protection would come to be regarded as unfortunate and even somewhat disreputable beings, while the faith of one family in its guardian-animal would react upon and strengthen the faith of others in theirs. So a system of clan-totems would be established, around which would grow up various myths of origin, various magical practices, and various religious rites.

It is well known that such dreams as convince the Iban, the Kayan, and the Kenyah of the reality of his special relation to some animal and lead him to respect all animals of some one species produce similar results in other parts of the world. We quote the following passages from Mr. Frazer's remarks on individual totems in his book on totemism:—"An Australian seems usually to get his individual totem by dreaming that he has been transformed into an animal of that species." "In America the individual totem is usually the first animal of which a youth dreams during the long and generally solitary fasts which American Indians observe at puberty." Such dream experiences are, then, the *vera causa* of the inception of faith in individual totems among the peoples in which totemism is most highly developed, and among the tribes of Sarawak we find cases which illustrate how a similar faith, strengthened by further dreams and by the good fortune of its possessor, may spread to all the members of his family or of his household and to his descendants, until in some cases the guardian-animal becomes almost, though not quite, a clan-totem. The further development of such incipient totems among these tribes is probably prevented at the present time, not only by their agricultural habits, but also by their passionate addiction to war and fighting and head-hunting; for these pursuits necessitate the strict subordination of each community to its chief and compel all families to unite in the cult of the hawk to the detriment of all other

animal-cults, because the hawk is, by its habits, so much better suited than any other animal to be a guide to them on warlike expeditions.¹

The prevalence of the belief in a Supreme Being must also tend to prevent the development of totemism, and we cannot conclude without saying something as to the possible origin of this conception of a beneficent Being more powerful than all others, who sends guidance and warnings by the omen-birds, and receives and answers the prayers carried to him by the souls of the fowls and pigs. It might be thought that this conception of a beneficent Supreme Being has been borrowed directly or indirectly from the Malays. But we do not think that this view is tenable in face of the fact that while the conception is a living belief among the Madangs, a tribe closely allied to the Kenyahs that inhabits a district in the remotest interior and has had no intercourse with Malays, the Ibans, who have had far more intercourse with the Malays than have the Kayans and Kenyahs, yet show least trace of this conception. As Archdeacon Perham has written of the Ibans, there are traces of the belief in one supreme God which suggest that the idea is one that has been prevalent, but has now almost died out. We are inclined rather to suppose that the tribes of the interior, such as the Kenyahs and Kayans, have evolved the conception for themselves, and that in fact Balli Penyalong of the Kenyahs is their god of war exalted above all others by the importance of the department of human activity over which he presides; for we have seen that they have conceived other gods, Ballingo, the god of thunder, Balli Sungei, the god of the rivers, whose anger is shown by the boiling flood, and Balli Atap, who keeps harm from the house, while the Kayans have gods of life, a creator of the world, Laki Kalira Murei, a god of harvesting, and others. It seems to us that the only difficult step in such a simple and direct evolution of the idea of a beneficent Supreme Being is the conception of gods or spirits that perform definite functions, such as Balli Atap, who guards the house, and the gods that preside over harvesting and war, as distinct from such gods or spirits as Ballingo and Balli Sungei. But there seems to be no doubt that this step has been taken by these peoples and that these various gods of abstract function have been evolved by them. And it seems to us that were a god of war once conceived it would be inevitable that, among communities whose chief interest is war and whose prosperity and very existence depend upon success in battle, such a god of battles should come to predominate over all others and to claim the almost exclusive regard of his worshippers. Such a predominance would be given the more easily to one god by these people because the necessity for strict subordination to their chiefs has familiarised them with the principle of obedience of subjects to a single ruler;

¹ Dr. Boas is of the opinion that the totems of the Indians of British Columbia have been developed from the personal "manitous," the guardian animals acquired by youths in dreams. Miss A. C. Fletcher is led to a similar conclusion by a study of the totems of the Omaha tribe of Indians (*Import of the Totem*, Salem, Mass., 1897). The facts described above in connection with the "Nyarong" of the Ibans and similar allied institutions among other tribes of Sarawak would seem, then, to support the views of these authors as to the origin of totemism.

while the beneficence of the Supreme Being thus evolved would inevitably result, for the god of battles must seem beneficent to the victors, and among these people only the victors survive. Again, this conception is one that undoubtedly makes for righteousness, because it reflects the character of the people, who, within the community and the tribe, are decent, humane, and honest folk.

We are conscious of presumption in venturing to adopt the view that the conception of a beneficent Supreme Being may possibly be neither the end nor the beginning of religion, neither the final result of an evolution, euhemeristic, totemistic, or other, prolonged through countless ages and generations, nor part of the stock-in-trade of primitive man mysteriously given, as Mr. Lang¹ seems to wish to make believe. Yet we are disposed to regard this conception as one that, amid the perpetual flux of opinion and belief which obtains among peoples destitute of written records, may be comparatively rapidly and easily arrived at under favourable conditions, such as seem to be afforded by tribes like the Kenyahs and Kayans, war-like, prosperous tribes subordinated to strong chiefs, and may as rapidly fall into neglect with change of social conditions, and may then remain as a vestige only to be discerned by curious research in the minds of a few individuals, as among the Ibans or the Australian blacks, until another turn of Fortune's wheel, perhaps the birth of some overmastering personality or a revival of national or tribal vigour, gives it a new period of life and power.

We hope to give some account of the superstitions of these people in regard to plants in a separate paper. Here we will only mention that none of the facts of this kind known to us seem to make against the views we have taken of the meaning and origin of some of the animal-cults.

¹ *The Making of Religion and Myth, Ritual and Religion*, 2nd edition.

MEMORANDUM ON THE LANGUAGES OF THE PHILIPPINES.

BY WILLIAM E. W. MACKINLAY.

THE Philippines cannot be properly spoken of as Spanish-speaking territories. Within the confines of the Magellanic Archipelago the language of its ancient rulers has never been more than an exotic, spoken only by Spaniards and a comparatively few educated natives. A much larger number of natives, especially in the city of Manila, have acquired a smattering of Castilian, but by far the greater majority of the inhabitants of the islands do not understand it at all. Even within ten miles of Manila, natives can be found who do not speak a word of it, although the city has been the centre of Spanish learning in the Orient for more than three centuries.

The statement so often repeated in articles about the Philippines that there are anywhere from two hundred to three hundred "languages" spoken in the islands is so far from the truth that it refutes itself. The truth is that there are eight tongues spoken by the civilized races of the country, and about sixty dialects of the savage mountain tribes. A large number of these latter have never been reduced to writing, and but few have received any scientific study whatever. A dialect of Spanish is spoken in and around Zamboanga (Mindanao), and there are two or three dialects spoken by small half-civilized tribes. Besides the above mentioned languages and dialects, there are Negrito dialects, so far almost utterly unknown, spoken in the remotest mountains of many provinces.

By far the most cultured and advanced language of the Philippines is Tagalo, spoken in the eight provinces of Manila, Cavite, Bataan, Bulacan, Morong, Laguna, Batangas and Tayabas, and parts of Nueva Ecija, Mindoro, and Camarines, and at a few points of smaller importance. Like all the Philippine languages (Negrito dialects excepted), Tagalo belongs to the widely spread Malay family, which with its allied congeners of Polynesia and Micronesia, extends from Madagascar to Hawaii and from New Zealand to Formosa, as well as to the far off Easter Island west of Chili.

Compared with an Aryan language, Tagalo is deficient in many qualities which have made European tongues the vehicle of civilization. It is deficient in the expression of the verb "to be," and in the comparative and superlative of the adjective, and has no grammatical gender. The plural of nouns and pronouns is also very simple, the word *manñá* being prefixed to the word pluralized. The article is also unvarying, as in English. In the conjugation of the verb it is also

somewhat imperfect, as only a few tenses are clearly distinguished, and the moods are nebulous. The latter are the infinitive, imperative, indicative and subjunctive. The tenses are the present, past, future, perfect, future perfect and pluperfect. The past is expressed like the present, the sense being indicated by the context. There are two voices, the active and the passive. The complexity of the Tagalo verb, however, arises from the fact that there are seventeen classes of verbs, each with its prefix for the active and passive voices. The first plural personal pronoun "we," also has the peculiarity of having a double form. The first includes both the speaker and the addressed, but the second excludes the latter. Thus *Angáting báhay* (Our house), includes both, but *Angámíng báhay* (Our house), excludes the party addressed. The article also has two forms, one used with proper, and the other used with common nouns. The adverb greatly resembles the verb in usage, and in form the adjective. The other forms of speech do not greatly vary from those of European languages in their usage. A striking feature of the language are the "ties" *G*, *NG*, *Na*, and *Ay*, which are inserted between discordant words, and also serve to indicate the genitive in the case of the three first, while the last is a substitute for the verb "to be." Tagalo lacks the English *F*, *Th*, *J*, *Sh*, and *Z*, but has *Nj*, a peculiar guttural-nasal.

Second to Tagalo in importance is the Visaya language, which, however, is divided into several districts, known as Cebuano, Boholano, Panayano, Halay, and Halagueina, all mutually intelligible. The centre of the Visayan race is at Iloilo, with a large subcentre at Cebú. The maritime tendencies of the Visayans have carried their tongue far beyond its original limits, and it is now spoken on the islands of Panay, Bohol, Cebú, Leyte, Masbate, Ticao, Romblon, Samar, and the districts of Butuan, Dapitan, Davao, Mati, Misámis, and Surigao in Mindanao, as well as in a part of the island of Mindoro.

Visaya greatly resembles Tagalo, but is a more virile and expressive tongue. It has also preserved more of the original vocabulary of the primitive language, being less affected by contact with Spanish. It has substantially the same structure as the more northern speech, but is blunter as befits a race of sailors. For example, the expression for "our house," using the exclusive form, is *Ang coming balay*; Tagalo, *Ang áming báhay*. The numerals in several languages of the islands at the close of this article will more clearly show their differences and resemblances.

Bicol is the third most important language, and is spoken in the great hemp-producing peninsula at the south-east extremity of Luzon, comprising the provinces of Ambos Camarines, Albay, and Sorsogon, as well as in the large island of Catanduanes. It is an intermediate tongue between Tagalo and Visaya, and has preserved a large number of archaic words now disused in those tongues. With the same general grammar, it differs much in vocabulary from both in the everyday words of life, and the language as spoken in the interior differs a little from the same as spoken in the seaport towns. Bicol

is also much less euphonious and of harder pronunciation than either of the above mentioned. From both languages it can be said to differ as English and Scottish do.

The next four languages, Ilocano, Cagayan, or Ibaneg, Pampango, and Pangasinán, are spoken in the north-western part of Luzon; from the south line of Pampanga Province to the northern point of the island, along a strip of seaboard from ten to twenty or more miles in breadth. This district includes the Provinces of Pampanga and Tarlac, where Pampango is spoken; Pangasinán and a part of Zambales, in which Pangasinán is used; the northern part of Cagayan (Cagayan); and Union, Ilocos Sur and Ilocos Norte (Ilocano). Some parts of Tarlac and Nueva Ecija also belong to the Pampanga area.

These languages closely resemble each other and are still more archaic in vocabulary and syntax than the more southern tongues. Ilocano has been reduced to writing since the early part of the seventeenth century, and this has undoubtedly preserved it from change.

The eighth "civilised" tongue is Calamiano, spoken by the people of that small group, which is situated between the islands of Mindoro and Palawan. It is really a dialect of Tagbanua, the language of a great part of Palawan.

The savage tribes are found in three large groups, with another isolated group in an outlying island (Negros), and one tribe in the islands of Mindoro and Romblon. The first large aggregation is found in the mountains and more hilly regions of the northern part of Luzon, the second occupies the greater part of the little known Mindanao, and the third is in the islands of Palawan and Calamianes. These tongues are little known, but are all of the Malay family. Those of Luzon resemble very primitive Ilocano or Tagalo, while those of Mindanao have more likeness to the dialects of Celebes and Borneo. Joloáno, the speech of the Moros, is the best known of these languages, and is almost like the Malay of Singapore. The great group of savage tribes in Northern Luzon is known collectively to the Spaniards as Igorrote, and is as yet almost completely unknown philologically.

The first great group, roughly speaking, occupies a large part of Luzon, north of the Gulf of Lingayen and east of the Ilocanos. It also embraces part of the Province of Zambales. The tongues spoken are Apayao, Banao, Catalangan, Cataon, Caucanay, Dadaya, Egongot, Gaddan, Guinaan, Ibilao, Idayan, Ifuga, Inabaloy, Isinay, Iraya, Itaves, Itetepan, Malauag, Tiguan, Tino, and Yogat. The provinces embraced either in whole or in part by this linguistic region, are those of Abra, Benguet, Bontoc, Cagayan, Ilocos Norte, Ilocos Sur, Isabel, Nueva Vizcaya, Principe, and Zambales, together with the districts of Amburayan, Binatangan and Cayapa. In the Batanes Islands, north of this region, Batan is also spoken. These tribes are very little affected by civilization, and the majority are yet pagans.

The second great group encountered in the island of Mindanao and its smaller dependencies of Joló, Siasi, Tau-i-Tau, and Basilan, is constituted of the

tribes who use Atá, Bagobo, Bilan, Calagan, Guianga, Dulangan, Iliano, Joloáno, Maguindinao, Malanao, Mandaya, Manobo, Mamanua, Samalés, Samal-laut, Sanguil, Subano, Tagabili, Tagcalao, Tagbaua, and Tiruray. These peoples are pagans and Mohammedans, with a sprinkling of Catholics. As has been noted above, some parts of Mindanao are inhabited by Visayans, and the peninsula and town of Zamboanga by semi-civilised natives, who alone among Filipinos have adopted the language of their former rulers, Spanish. Buquidnon, which must not be confounded with a language of Negros, is also spoken in Mindanao.

In the island of Negros, the hill tongues are known as Carolano and Buquitnon, both allied to the speech of the other tribes to the south.

Manguian is spoken in Mindoro and Romblon, islands to the south-west of Luzon, and a little further on are the islets known as the Calamianes, where Coynóo and Agutaino yet linger.

Still further to the south-west lies the long and narrow Palawan or Paragua, with its satellite of Basilan at its south-west point. Tagbanua, Tandolano, Batac and Joloáno are the dialects of these islands, which is more unexplored linguistically than any other. Tagbanua is remarkable from the fact that the ancient semi-syllabic alphabet used in ante-Spanish days, is used in its written communications. It has sixteen characters, and to the writer's recollection greatly resembles Siamese or Burmese writing. Batac is an exotic in the Philippines, and is used by the descendants of quite recent immigrants from Sumatra, which is believed by the leading native philologists to be the original home of all the Malay race.

The eight leading languages are written in Roman letters, while Joloáno and many other dialects of Mindanao use the Arabic alphabet.

Among the leading workers in this field have been Professor Blumentritt, of Austro-Hungary, Mr. de Los Reyes of Manila, and many others, among them the distinguished Frenchman, de la Couperie, who died in despair, because his work was not, as he thought, appreciated just on the eve of success.

The foregoing is a brief *résumé* of the linguistic field in the Philippines, and it is to be hoped that work and research in this line will go on, a credit to the investigators and an aid to the officers and employés of the United States, under whose banner this medley of races shall find peace, prosperity and true liberty.

The first ten cardinals in Tagalo, Visaya, Bicol, Pampanga, Malay, Pangasinan, Ilocano, Maguindanao, Ibanag (Cagayan) and Bagobo.

	<i>Tagalo.</i>	<i>Visaya.</i>	<i>Bicol.</i>	<i>Pampango.</i>	<i>Ibanag.</i>
1	Isá.	Isá ; Usá.	Sarô.	Metung.	Adde.
2	Dalauá.	Daroa ; Duha.	Duà.	Aduá.	Dua.
3	Tatló.	Tatlo ; toló.	Toló.	Atlú.	Tallu.
4	Apat.	Apát ; opát.	Apát.	Apat.	Appat.
5	Limá.	Limá.	Limá.	Lima.	Lima.
6	Anim.	Anúm ; unúm.	Anòm.	Anam.	Annam.
7	Pitó.	Pitó.	Pitó.	Pitú.	Pitu.
8	Ualó.	Ualó.	Ualó.	Ualú.	Ualú.
9	Siyám.	Siám.	Siam.	Siam.	Siam.
10	Sangpóuo.	Napolo ; poló.	Sangpolô.	Apúlu.	Mafulu.

	<i>Malay.</i>	<i>Pangasinan.</i>	<i>Ilocano.</i>	<i>Maguindanao.</i>	<i>Bagobo.</i>
1	Satu.	Saguey.	Meysa.	Isa.	Sab-bad.
2	Duwa.	Dua.	Dua.	Dúa.	Duá.
3	Tiga.	Tallo.	Talló.	Telu.	Tatlo.
4	Ampat.	Apat.	Uppat.	Apat.	Appat.
5	Lima.	Lima.	Lima.	Lima.	Lima.
6	Anam.	Anim.	Inném.	Anem.	Annam.
7	Tujuh.	Pito.	Pito.	Pitú.	Pit-to.
8	Delapan.	Ualo.	Ualo.	Ualu.	Ualo.
9	Sembilan.	Siam.	Siam.	Siau.	Sio.
10	Sapuluh.	Sampung.	Sangapol-lo.	Sapulu.	Sapolo.



PANDAT (TYPE 10).



NIABOR (TYPE 2).



(a) (b)
PARANG ILANG (TYPE 1).



BAYU (TYPE 5). JIMPUL (TYPE 4).





PAKAYUN (TYPE 6).



LANGGAI TINGGANG (TYPE 3).



PARANG PEDANG (TYPE 7).



LATOK (TYPE 8).

BUKO (TYPE 9).

A PROVISIONAL CLASSIFICATION OF THE SWORDS OF THE SARAWAK TRIBES.

BY R. SHELFORD, M.A., C.M.Z.S.

[PRESENTED 12TH NOVEMBER, 1901. WITH PLATES XVI, XVII.]

THE great majority of Bornean swords found in the ethnographical collections of European museums bear on their labels merely the vaguest and most insufficient data as to place of origin, nature, function, etc., a matter of little surprise seeing that practically no literature relating to these weapons exists. The following paper, treating of the swords of the Sarawak tribes, seeks in part to remedy this. I have drawn up brief diagnostic descriptions of all the varieties of swords from Sarawak with which I am acquainted, have briefly classified them and given their tribal distribution; the synoptical key at the end of the paper, though perhaps as artificial as such keys usually are, will, I hope, enable museum curators to identify readily and correctly most of the specimens of Bornean swords in the collections under their charge. The paper is the result of researches and inquiries extending over a period of three years, and though I have no doubt that further researches along the same lines will bring to light fresh information, I have no reason to believe that the classification that I have adopted will be altered in any important detail,¹ at the same time it is capable of extension and must therefore be looked on as provisional only. The illustrations are taken from specimens in my own collection, but the specimens in the Sarawak Museum collection have, through the mouths of reliable natives, yielded much valuable information, and I have also seen many examples in the possession of various officers of the Sarawak service.

The *kris*, a double-edged dagger, essentially a Malay weapon, and the *kompilan*, a long two-handed sword, used by the Ilanun pirates, who frequent the coasts of many of the Malayan Islands, are not discussed here, although met with in Borneo.

It should be noted that though some of the swords here described are intended primarily for use in warfare, they may also serve as agricultural implements or as carpentering tools or *vice versa*.

Terminology employed.—*Parang* is the Malay and Sea-Dyak word for these weapons, and will be used in preference to the English word *sword*.

The blade of a *parang* measures from 50 to 100 centimetres in length; it has a back, an edge, and two sides. When held in the right hand with the back

¹ A few swords from Dutch Borneo that I have seen since this paper was written do not differ at all markedly from those from Sarawak.

upwards, that side on which the thumb is placed on the handle is the inner side. The edge is *anterior* and the back is *posterior*; any pattern which is nearer to the one or the other is respectively *anterior* or *posterior*. The back may be straight or with a concave curvature, it never has a convex curvature. The edge similarly may be straight or with a convex curvature, it never has a concave curvature. The blade may also have a slight outward curvature. The sides of the blade may be flat or as in the *parang ilang* the inner side is concave and the outer convex in an antero-posterior direction (in left-handed *parang ilang* these aspects are of course reversed). The edge rarely reaches up to the handle, the intervening portion may be termed the *shoulder*. The back and the edge may pass insensibly into the point of the blade, but most frequently the back is much shorter than the edge, so that the blade appears as if it had been obliquely truncated; this truncate edge may be termed the *slope*; the angle and consequently the length of the slope vary considerably in the different varieties of *parangs*. The handle, which is made either of stag's horn, bone or wood, is always carved and frequently decorated with tufts of dyed hair. The blade is inserted into a hollowed-out part of the handle and secured by a stopping of stick-lac. That part of the handle which is held in the hand is served with plaited rattan, wire, or metal rings, and is termed the *grip*. The decorated part of the handle is not held in the hand, and is termed the *head*.

The sheath is invariably composed of two grooved slats of wood roughly of the shape of the blade, and bound together by plaited rattan or wire; along the inner side of the sheath there is generally lashed a bark pocket containing a small knife with a long, angled handle.

The *parang* is worn strapped to the left hip, with the edge directed upwards.

The following is a list of the varieties of *parangs* known to me, with their tribal distribution:—

1. <i>Parang ilang</i>	...	...	...	{	Kayans, Kenyahs, Kajámans.
Kyan name, <i>Malat</i> or <i>Mandau</i>					Kanówits, Kalábits, Púnans.
Kenyah name, <i>Baieng</i>			...		Úkits and allied tribes.
2. <i>Niábor</i>	...	...	...		Sea-Dyaks.
3. <i>Lānggāi tīnggang</i>	...	...	...		Sea-Dyaks.
4. <i>Jimpūl</i>	...	...	...		Sea-Dyaks.
5. <i>Báyu</i>	...	...	...		Sea-Dyaks.
6. <i>Pókáyūn</i>	...	...	...		Mūrúts.
7. <i>Parang pēdāng</i>	...	...	...		Malays, Milānos.
8. <i>Lātók</i>	...	...	...		Malays, Milānos.
9. <i>Būkō</i>	...	...	...		Land-Dyaks.
10. <i>Pāndāt</i>	...	...	...		Land-Dyaks.

1. *Parang ilang*.—This is the term applied by Malays and Sea-Dyaks to the weapon of the Kayans and allied tribes mentioned above; the meaning of the word *ilang* I have not been able to ascertain. The blade of this weapon (Plate XVI,

lower left), which varies in length from 50–70 centimetres, differs from that of all others in being concave on the inner side and convex on the outer side in an antero-posterior direction; the blade also curves slightly outwards. At the greatest breadth of the blade, the back ceases and there is a slope which varies much in length. The edge of the blade ceases at about 8 centimetres from the handle, resulting in the formation of a shoulder. A pattern generally occupies the shoulder and runs along the posterior part of the blade on its outer aspect only till it reaches the slope. The pattern may be either incised or fretted, or made up of silver and brass hammered into the body of the blade, or a combination of all three of these methods may be employed; less frequently the blade is quite plain. The elements of the patterns with which I am acquainted are as follows:—*udoh asu*, a dragon design; *ulai nipa*, or snake design, being a continuous scroll pattern; *karan*, short incised lines, arranged in groups of two or three; *merkutau*, brass or silver studs hammered into the blade, sometimes completely perforating it; *lukut*, a brass stud enclosed in a brass circle, supposed to represent a valuable and ancient bead, strings of which are worn by chiefs. All these elements may occur on one blade. The slope of the blade is very variable, both in length, curvature and ornamentation, and by virtue of these differences, and of variations in pattern, the natives subdivide the *parang ilang* into numerous varieties; the schemes of classification of the various tribes do not coincide, and the names of identically similar varieties interchange in the most bewildering manner, as one travels from one district to another.

The following is the classification of the Kajamans of the Belaga district, Upper Rejang river, Sarawak. The generic term *song* means *end* or *termination*, as *e.g.* :—*song irang*—shoots of bamboo.

1. *Song bila*—a fret-work pattern on the slope.
2. *Song ikang*—hooks or projections on the slope.
3. *Song bang*—slope not fretted nor produced into hooks and projections but perfectly plain, or excised into a series of short concave curves.
4. *Song but*—slope rounded and sometimes sharpened into a cutting edge.
5. *Song batong*—fret-work at intervals all along the blade.
6. *Song belubong*—an identical pattern on both sides of the blade.

Of the two *parang ilang* illustrated, that on the left (*a*) is by this classification a *song ikang*, the other (*b*) is a *song bang* of simple type. The Peng Kayan (a tribe of the Mahakkam river, Dutch Borneo) name for this however is *song apong*, whilst the Leppu Tau Kenyahs of the Batang Kayan river, Dutch Borneo, give a name to the more ornate type of *song bang*, which means swallow's wings.

The varieties *song bila* and *song ikang* are not always readily distinguishable. In the Baram district the word *bila* seems to be used instead of *song*.

The Sarawak Museum has a fine series of these weapons, illustrating all the above-noted variations.

The anterior edge of the shoulder is frequently provided with a pair of hook-like projections (*ikang*), constituting a sort of rudimentary finger-guard, the

hooks when present are part of a dragon design incised on the shoulder and represent the horns of the dragon.

The handle is usually made of stag's horn, but occasionally of wood; the stag's antler is cut through at the burr, the beam and the brow tine are cut short; the cut ends are then hollowed out, and the blade of the *parang* is inserted into the beam, and a long tuft of dyed goat's-hair (*ujeh*) is fastened with *dammar* in the cut end of the burr, which is smoothed down, and a shorter tuft in that of the brow tine; both burr and brow tine are elaborately carved with a complicated dragon and anthropomorphic design, and constitute the head of the handle. The beam forms the grip of the handle and is served with plaited rattan or wire; the insertion of the blade into the handle is concealed by a thick ring of *dammar*, into which is frequently stuck a silver coin or stud. The head is further decorated with short tufts of hair inserted into small holes which are bored for the purpose. Such a type of handle is shown in specimen (*a*). In the *Mahakkam* river another type of handle is more frequently met with; in this, the blade is inserted into the smoothed-down burr, and the cut ends of the beam and of the brow tine form a Y-shaped head, carved and decorated with hair: specimen (*b*). In a third type of handle, confined also to Dutch Borneo, the blade is inserted into the beam, but the burr and brow tine are so carved as to form a right-angled crutch.

The sheath, which corresponds roughly in shape to the blade, is made of two grooved slabs of wood tightly bound together by four or five lashings of rattan or wire: the rattan lashings are generally plaited in a very complicated manner, and the term "*Katong evok*," meaning the twistings of a whirlpool, is applied to them; under the lashings are inserted tufts of hair generally red and white arranged alternately (*bok say*). Between the first and second lashings on the outer side of the sheath there is almost invariably a pointed plaque of wood, cut out from the body of the sheath, or if of bone, lashed to the sheath; this is known as the *belilap*, and is either elaborately carved with the dragon design or decorated with hair; a strip of skin covered with hair passes under it round the sheath. The interspaces between the other lashings are sometimes occupied by carvings, or carved pieces of bone are let into the sheath. Sometimes the point of the sheath is closed by a stop of bone, the *sibong*. The inner side of the sheath, which is quite plain, has a bark pocket, the *apis*, attached to it; the *apis* contains a small knife, the *nyiu*, with a long handle; to the outer side of the *apis* is frequently sewn a strip of bead-work. Threaded through the *apis* and under the strip of skin encircling the sheath is the sword-belt or *blavit* of plaited rattan covered with cloth or bead-work; one end of the *blavit* terminates in a loop, the other end is knotted to form a toggle, the *skabat*. Sometimes the toggle is elaborately carved from a piece of rhinoceros horn or from the casque of the solid-casqued hornbill *Rhinoplax vigil*.

2. *Niabor*.—This is the characteristic Sea-Dyak *parang*, the others mentioned below are of quite recent origin and owe their shape to Kayan or Kenyah influences. The blade of the *niabor* (Plate XVI, upper right) is generally about 60 centimetres long, but a specimen in the Sarawak Museum measures 90 centimetres. The

back and edge both have a pronounced anterior curvature and pass insensibly to the point; the blade is broadest near the point, and gradually tapers proximally until the edge suddenly ceases at some distance from the handle; midway between this point and the insertion of the handle projects a large finger-guard, the *kundieng*, a feature which is entirely diagnostic of this type of weapon. Distal of this finger-guard, the anterior border of the blade is squarely emarginate, and the space is known as the *sangau*; proximal of the finger-guard the blade is rounded or polygonal in section, and in reality constitutes part of the handle; this part of it is known as the *tamporian*.

The blade is rarely ornamented, occasionally however a groove runs along the posterior border on both sides, from the *tamporian* to near the point. The handle is carved from stag's horn or wood; in the former case the same part of the antler is used as in the *parang ilang*, and the blade is inserted into the cut end of the beam; the head of the handle is much flattened laterally, and the brow tine is whittled away and forms a very acute angle with the beam; the burr is carved into a small knob. A phyllomorphic pattern is carved on the head of the handle. The following are the names of the usual patterns:—*Cantok resam* (shoots of *Gleichenia dichotoma*), *telingai* (scorpion), *entadok kaul* (caterpillars interlocking). The grip is served with rings of metal known as *grunieng*. No hair is ever attached to the handle or sheath. The sheath calls for no special notice.

3. *Langgai tinggang*.—This, another Sea-Dyak *parang* (Pl. XVII, upper r.), is practically a *niabor* with the handle of a *parang ilang*. The term *langgai tinggang*, meaning the longest tail-feather of a hornbill, is applied to this weapon by reason of a broad groove which runs along the posterior part of the blade on each side, and which is fancifully supposed to be feather-like in appearance; this groove runs across to the anterior border just below the rudimentary finger-guard. This finger-guard is not a derivative of the *kundieng* of the *niabor*, but is a copy of the *ikang* of the *parang ilang*, which, as already shown, constituted part of a dragon design; the Sea-Dyak term *crowit* or hooks shows that this has no connection with the *kundieng*.¹ Each side of the shoulder is incised with a phyllomorphic design, such as those given on the preceding page. The sides of the broad groove running along the blade may be bordered with a simple scroll pattern, *entadok*, or caterpillar.

The handle of a *langgai tinggang* differs in no wise from that of a *parang ilang*. The sheath is also similar except in shape.

4. *Jimpul*.—The *jimpul* is of quite recent origin, i.e., within the last thirty years, and may be considered as a hybrid between the *parang ilang* and the *langgai tinggang*. The blade (Pl. XVI, lower r.) has flat sides and both back and edge have a strong anterior curvature, thus resembling the two preceding types of *parangs*. The back and edge however do not pass insensibly to a point, but there is a short

¹ I have, however, a drawing by Dr. Hiller, of Philadelphia, of a *langgai tinggang* with a *kundieng* instead of *crowit*, but it is the only example of such a variation that has ever come to my knowledge.

and abrupt slope. The blade at the commencement of the slope is very broad, the difference in breadth between this point and at a point near the handle being as much as 2.5 centimetres. Hooks and projections (*krowit*) or a fret design occur on the slope, and sometimes for a short distance along the back; two or three grooves run along the posterior part of the blade on each side, and each side of the shoulder is incised with a phyllomorphic pattern. A rudimentary finger-guard (*krowit*) of the same nature as those of the *parang ilang* and *langgai tinggang* is generally present; in the specimen illustrated the hooks constituting this finger-guard constitute part of the phyllomorphic design (*telingai*) incised on the shoulder of the blade, but this is unusual, for as a rule the finger-guard being slavishly copied from a Kayan model as in the *langgai tinggang*, bears no sort of relation to the design on the shoulder of the blade which is not copied from a Kayan model.

As the Sea-Dyaks have now taken to making the *parang ilang* themselves, embellished with degraded copies of Kayan designs, it is not surprising to meet with specimens of the *jimpul* similarly ornamented, but it should be remembered that phyllomorphic designs are essentially the characteristic designs of the Sea-Dyak men,¹ and a foreign influence is to be suspected when a zoomorphic or anthropomorphic design is encountered in the decoration of their *parangs*.

The handle of the *jimpul* needs no description, being a direct copy of the *parang ilang* handle. The sheath similarly is copied from that of the *parang ilang*.

5. *Bayu*.—The *Bayu* is also a Sea-Dyak *parang* of modern origin. It is a modification of the type of *parang ilang*, known by the Kajamans as *song but*; in the *song but* (p. 221) the slope is rounded and frequently sharpened into a cutting edge; the inner side of the blade is, however, concave and unornamented the outer side is convex and ornamented with a pattern along the posterior border. The *bayu* (Pl. XVI, lower r.) is sharpened along the back as far as the shoulder, so that the blade in section is oval, the pattern is identical on both outer and inner aspects and runs down the centre of the blade, not along the posterior border only. In the specimen illustrated, the ornamentation of the blade consists of two broad and two narrow grooves running from the shoulder nearly to the point, and on the shoulder of incised lines and brass studs. The edge is nearly straight, but the sharpened back has a slight convex curvature near the point, and the blade is here broader than at any other point.

The handle and sheath are of the usual *parang ilang* type.

The following are the Sea-Dyak terms for the various parts of a *parang*:—Handle, *ikil*; ring of dammar concealing insertion of blade, *balut*; finger-guard, *krowit*; incised lines on blade (Kyan, *karan*), *kowal*; triangular panel on outer side of sheath (Kyan, *belilap*), *tandup*; bone stop at end of sheath, *sakum*; lashings of sheath, *kowit*; hair, *jabor*; belt, *supei*.

¹ The women weave zoomorphic designs into their cloth, but the men do not even know the names of the patterns, much less how to reproduce them.

6. *Pakayun*.—This is the very characteristic *parang* of the Muruts, a tribe inhabiting parts of Northern Borneo. The long, curved, cutlass-like blade (Pl. XVII, upper l.) measures 60–65 centimetres¹ in length and about 3 centimetres in breadth; it is of almost uniform diameter throughout. The back is slightly shorter than the edge, so that there is a short slope. The back near its termination is occasionally bevelled for a short distance. The blade is never ornamented. The handle is invariably made of wood, and the head is peculiar and distinctive in shape. It may be compared with the Y-shaped handle of stag's horn of the Mahakkam river *parang ilang*; the blade is inserted into the stalk of the Y, corresponding to the burr of the antler, and the limbs of the Y, corresponding to the beam and brow tines of the antler, and forming the head of the handle, are curved forwards (*i.e.*, downwards, if the *parang* is held in the natural way with the back of the blade uppermost); the space between the limbs of the Y is filled in with a carving which may extend, as in the specimen exhibited, far beyond the ends of the limbs of the Y. The handle of the specimen illustrated is of rather an ornate nature, more usually the carving is simpler and less extensive. The grip of the handle is supplied by a cylinder of brass expanding at the insertion of the blade into a circular lip, the *umbo*, which serves as a finger-guard. This cylinder rarely extends up to the point of divarication of the limbs of the Y, and the interspace is covered by plaited rattan.

The sheath as usual is made of two slats of wood bound together by rattan, wire, or strips of tin; the spaces between these bindings are occupied on the outer side by geometrical designs. To the inner side is attached a bark pocket decorated with hair.

7. *Parang pedang*.—The *parang pedang* or *pedang* is used by the Malays and Milanos (a coastal tribe that has embraced Islam), chiefly for such purposes as the felling of jungle or the splitting-up of the logs of the sago palm. The blade (Pl. XVII, lower l.), which measures in length about 60 centimetres,¹ is very strongly curved, very broad in the distal third, measuring as much as 6·5 centimetres, and tapering rapidly to the point of insertion into the handle. The back passes insensibly to the point so that there is no slope, and the edge runs up almost to the handle, so that a shoulder is not distinguishable. The blade is quite free from ornamentation. The handle, the shape of which is characteristic of this and of the two *parangs* described below, is invariably made of wood. The head of the handle is formed by a forwardly directed knob; the under surface of the knob is concavely curved, and runs into the grip; the upper surface is convexly curved, and is transversely grooved, so that a varied moulding is produced; the sides of the knob are flattened. The grip is served with plaited rattan. The sheath is quite simple in character.

8. *Latok*.—Used chiefly by Malays and Milanos, though introduced into other tribes comparatively recently.

¹ These measurements refer to the specimens figured, which are all deposited at present in the Pitt-Rivers Museum, Oxford.

The chief characteristic of this *parang* is the open angle which the shoulder of the blade and the handle form with the rest of the blade. In the specimen illustrated (Pl. XVII, lower r.), the blade measures from its tip to the distal point of the shoulder 52 centimetres, and the length of the shoulder is 6 centimetres. The greatest breadth, 5.5 centimetres, is near the point, the smallest 2.5 centimetres at the angle of the shoulder. The back is a trifle shorter than the edge, and runs in a very steep and curved slope to the point; the back is very thick so that in its middle the blade is wedge-shaped in section. The shoulder is cut square, but may be polygonal in section or even rounded; in the Milano *sadap*, a variety of *latok*, the shoulder is octagonal in section. The handle is of the same type as in the *parang pedang*, i.e., the head is formed by a forwardly projecting knob of wood, and the upper border of this knob is "moulded" by transverse grooves. The grip is usually served by wire or plaited rattan, but sometimes, as in the specimen illustrated, by silver rings elaborately decorated with geometrical and phyllo-morphic designs worked in *repoussé*.

The sheath, which is quite straight, does not enclose the angled shoulder; the end is usually cut square.

The *parang*, which is used largely for agricultural purposes, is grasped by the handle and shoulder of the blade in both hands, and is then a highly effective chopping implement.

9. *Buko*.—This is the *parang* used by the Land-Dyaks; it differs principally from the *latok*, by its smaller size and elaborately carved handle. The blade (Pl. XVII, lower r.) measures from tip to distal point of shoulder about 45 centimetres, the shoulder is 7 centimetres long and rectangular in section; the greatest breadth of the blade is 4 to 4.5 centimetres; otherwise the blade is exactly similar to the *latok*. The handle is of the type described for the two preceding *parangs*, but the head is elaborately carved in deep relief; the pattern is supposed to represent the leaves of a wild mango, *graium*. The handle of the specimen exhibited is characteristic of the Betah Land-Dyaks of the Quop river, a branch of the Sarawak river; the Bennah of the head-waters of the Sarawak river make a much smaller handle, the Sempok a much larger handle, whilst the Pinyawa of the Samarahan river do not carve the head of the handle at all, and shave down the upper border of the projecting knob till in side view the head appears triangular. The grip is served with rattan.

The sheath is straight and does not enclose the angled shoulder; the mouth of the sheath is carved in deep relief with a phyllo-morphic design, and the end of the sheath is perforated with small holes into which are fixed, by wedges of wood, tufts of hair. The two slats of wood composing the sheath are bound together by loops of plaited rattan—*burad*; *burad patung* is a 5-ply loop, *burad kiring* a 7-ply loop, *burad tipiris* a 9-ply loop, *burad brad bodad* a 11-, 13-, 15-, or 19-ply loop. The belt known as *taris*, is made of the lining of the sheathing leaves of a palm.

10. *Pandat*.—The *pandat* is the war *parang* of the Land-Dyaks; it is never used in agriculture or handicrafts as is the *buko*. It is characterised (Pl. XVI,

upper l.) by the lack of a proper handle, the elongate and angled shoulder serving the purpose: a hole is bored through the shoulder of the blade in an antero-posterior direction nearly in the middle, and through this is inserted a short iron bar, the *sekak*, forming a cross-piece; the shoulder terminates in a sharp point, capped by a piece of horn; the surface of the shoulder, which is rectangular in section, is covered with tin-foil or with brass, and some hair is attached to the back. The portion of the shoulder proximal of the *sekak* is grasped, the forefinger passing over the anterior half of the *sekak*. The back of the blade in the specimen exhibited is longer than the edge, and the oblique end so formed is cut with a V-shaped notch forming a re-entering angle; this arrangement is characteristic of the Sidin Land-Dyaks; sometimes the blade and edge are of equal length, in which case the limbs of the re-entering angle are equal in length; or the limbs of the re-entering angle may be produced into short hooks or projections, and brass studs driven into the blade near its termination; this arrangement is characteristic of the Bennah Land-Dyaks. The sheath is straight and does not enclose the angled shoulder; its outer aspect is decorated with grooves in low relief forming geometrical designs, and with phyllomorphic designs; the designs may or may not be filled up with tin-foil; the phyllomorphic design at the end of the sheath occurs on both sides.

SYNOPTICAL KEY OF *Parangs*.

DESCRIPTION.	NAME.	PLATE.
A. Sides of blade not flat	<i>Parang ilang</i>	XVI, lower l.
B. Sides of blade flat.		
<i>a.</i> Blade double-edged	<i>Bayu.</i>	XVI, lower r.
<i>b.</i> Blade not double-edged nor angled.		
<i>a'.</i> Blade without slope.		
<i>a''.</i> Handle not ornamented with a design.	<i>Parang pedang</i>	XVII, lower l.
<i>b''.</i> Handle elaborately ornamented.		
<i>a'''.</i> Blade with prominent finger-guard.	<i>Niabor.</i>	XVI, upper r.
<i>b'''.</i> Blade without prominent finger-guard.	<i>Langgai tinggang.</i>	XVII, upper r.
<i>b'.</i> Blade with slope.		
<i>a''.</i> Blade long and narrow	<i>Pakayun.</i>	XVII, upper l.
<i>b''.</i> Blade broader	<i>Jimpul.</i>	XVI, lower r.
C. Blade angled.		
<i>a'.</i> A wooden handle.		
<i>a''.</i> Greatest breadth of blade exceeding 5 cm.	<i>Latok.</i>	XVII, lower r.
<i>b''.</i> Greatest breadth of blade not exceeding 5 cm.	<i>Buko.</i>	XVII, lower r.
<i>b'.</i> No handle	<i>Pandat.</i>	XVI, upper l.

DISCUSSION.

Mr. H. BALFOUR said:—Anthropologists will feel much indebted to Mr. Shelford for having laid down this classification of Bornean swords. In addition to the interest attaching to the subject, there will be practical application for his classification, since the curators of museums will now be able to label and describe correctly the weapons from this region. Too often one sees in museums such labels as “Dyak sword from Borneo” attached to specimens as the only information offered to the public, and too frequently the weapon is neither a Dyak one nor a sword, and moreover Borneo is an extensive region in which marked local distinctions are apparent, which should be specified. It is not always the fault of the curator, who very frequently has none but the vaguest information sent to him. Mr. Shelford’s scientific classification will, I am sure, be welcomed by all who aim at the proper systematic arrangement of collections comprising the particular weapons and tools with which he deals. I should like to ask Mr. Shelford to what extent the *parang ilang* is used as a weapon, and what are the peculiar cuts which render this unique form of blade efficient. It seems as though a direct cut at right angles to a surface would not be very effective, and a diagonal cut would tend to glance off if the concave surface of the blade were towards the object slashed at. On the other hand, it would seem that such a cut with the concave side towards the object would be dangerous and effective, as the tendency of the blade would be to bury itself deeply in this case. Similarly, I should like to be informed as to the correct use of the very awkward-looking *latok* and *pandat*. For a downward cut these appear to be highly inefficient, as the balance seems to be all wrong, throwing a great strain upon the wrist. They are well balanced for an *upward* cut, but this would perhaps not be a very effective form of attack. In regard to the forms of decoration, I should wish to ask Mr. Shelford whether it can be ascertained to what extent the patterns were originally intended to represent, the objects whose name is associated with the designs, or, on the other hand, whether those names have been given to the patterns merely because of a fancied resemblance to natural objects arrived at accidentally in the process of making variations upon existing designs, which in the first instance were not intended to represent those objects. Patterns may acquire names in either manner, and it is important to record when possible the manner in which a particular name has become associated with a given pattern.

Mr. SHELFORD replied that the *parang ilang* is used with a glancing cut with the concave surface towards the object, and makes in this manner a deep and effective cut. The *latok* and *pandat* are not used for an upward cut, but for a downward one, in which both hands are used. It is impossible to determine for certain whether the names of the patterns are derived from an original attempt to represent the objects whose names they bear now, or whether the names have been given in consequence of real or fancied resemblances arrived at accidentally during the process of varying existing patterns.

THE COLOUR VISION OF THE NATIVES OF UPPER EGYPT.

BY W. H. R. RIVERS, M.D.

[PRESENTED 25TH JUNE, 1901.]

THE starting point of the work to be described in this paper was an investigation carried out by Mr. D. Randall-MacIver in the winter of 1899-1900. Fifty natives of Upper Egypt were tested by Holmgren's method. Wools were used, to each of which a numbered label had been attached, so that a record could be kept of those chosen. A system of recording was adopted by means of which not only the wools actually matched, but also those compared even transiently with the test-wool were noted. Thus, a record would read as follows:—

Red test, p. 102, pp. 104, m. 20, 2, 16, pp. 9, 102.

This would mean that the native under examination had first picked up, and transiently compared with the test, the wool numbered 102; he had then deliberately compared No. 104 with the test but had rejected it as not matching; he had then matched three wools numbered 20, 2 and 16 respectively, and had finally compared and rejected the two wools numbered 9 and 102.

By means of a record of this kind, I was able to reproduce in England in detail the behaviour of natives who had been tested by Mr. Randall-MacIver in Egypt.

The same seven test-wools were used as in my work in Torres Straits¹ and elsewhere, viz., bright red, bright green, Holmgren's pink test, Holmgren's pale green test, yellow, blue and violet, usually in the order named.

On going through Mr. Randall-MacIver's records, it was obvious that many of the natives were perfectly normal while others showed exactly the same kind of behaviour which I had found in Torres Straits, viz., they tended to confuse green with blue and blue with violet, and Holmgren's pale green test was matched or compared, not only with yellowish-green or bluish wools of the same degree of saturation, but occasionally even with faintly pinkish wools. They tended to match wools according to their similarity in saturation rather than according to their similarity in colour-tone.

Among the fifty natives there were two or three individuals who appeared almost certainly to be examples of the ordinary form of red-green blindness, their matches and comparisons being typical of this condition, or of considerable weakness of the red-green sense. There were a number of other natives who,

¹ *Rep. Camb. Anthropol. Expedition to Torres Straits*, vol. ii, p. 49, 1901.

if they had been Europeans, would almost certainly have been regarded as examples of weakness of the red-green sense. These individuals matched or compared pink, violet and purple wools, and they also put brown wools with the bright red test. They did not, however, confuse pink and blue wools nor did they ever confuse red and green, and, taking their matches and comparisons as a whole they did not seem to me to be of the kind made by people with defective red-green sense. It seemed to me possible that the mistakes of these people might have been due to an exaggeration of a tendency of which I had observed traces in Torres Straits and elsewhere; a tendency to put together wools to which the same name would be applied. It seemed desirable to supplement Holmgren's method by other tests for colour blindness and also to study the colour-matches made by these people side by side with an investigation of the colour-nomenclature.

By the kindness of Mr. Randall-MacIver and the late Mr. Anthony Wilkin, I was enabled to do this in December, 1900, and January, 1901, at El Amrah close to Abydos in Upper Egypt. The natives examined were all peasants of Upper Egypt employed in the excavations in which Mr. Randall-MacIver and Mr. Wilkin were engaged. They nearly all came from the villages of Quft, Ballas and Sheikh Ali, a few natives of the village of El Amrah being also examined. They were typical fellahin from the same district of Upper Egypt and were fairly homogeneous, though a few probably had some strain of Sudani blood.

I first tested the natives with Holmgren's wools. I then obtained the names for colours in various ways. This was followed by the test for colour-blindness which has been recently recommended by Nagel.¹ This consists of cards on which are printed circles of dots in various colours, especially chosen to deceive the colour-blind. The methods recommended by Nagel were somewhat too complicated to allow me to use them with these people, and I was obliged to be content with asking the names of the variously coloured dots.

I then used Lovibond's Tintometer, which I have found to be a valuable means of detecting colour-blindness, and I also used this instrument to determine the thresholds for red, yellow and blue as in my work in Torres Straits.²

In examination of the colour sense I am always careful to test with Holmgren's wools before dealing with the names of colours, in order that the influence of language on the process of matching may be minimized as much as possible, but for purposes of exposition it will be convenient to begin with an account of the language employed for colour.

Colour Nomenclature.

I obtained the names of thirteen coloured, black and white papers sold by Rothe of Leipzig, supplemented by dark and light grey papers and six brown papers. I also asked the names of various wools, especially in the search for names

¹ *Arch. of Ophthalmology*, vol. xxi, p. 154, 1900.

² *Op. cit.*, p. 70.

for brown, and I occasionally inquired the names of the colours of natural objects, articles of clothing, etc.

My thanks are due for much help in this part of my work to Mr. Randall-MacIver and to Mr. J. E. Quibell. Prof. A. A. Bevan has also kindly looked through my list of colour names, and I am indebted to him for several suggestions.

I have adopted with one exception the method of writing the Arabic words which is used in Vollers' *Grammar of the Modern Egyptian dialect of Arabic*, translated by Mr. F. C. Burkitt. The exception is in the use of the letter Qâf, for which Vollers uses the sign 'ʾ'. As pronounced by the natives with whom I had to do, this consonant was like a very hard "g," and I have expressed it by the letter "q."

On asking the names of the various coloured papers and wools, I was very frequently given the names of garments or materials, such as *ḥarîr*, silk; *gûkh*, cloth; *ʿabaiyâ*, cloak; *qomâsh*, cloth; *tôb*, women's dress; *baftâ*, linen cloth; *quftân*, gown; *şedêri*, waistcoat-like garment; *libdâ*, felt.

Often these words were given alone, but they were also frequently combined with colour names, the papers or wools being called *ḥarîr aḥmar*, *gûkh iswid*, *ʿabaiye şafra*, *tôb abjad*, *baftâ samra*, *quftân akhdar*, etc.

In addition to the recognized terms for colour of the Arabic language, numerous other words were used. The former may be given first.

Aḥmar, fem. *ḥamra*, was used for red and for colours containing a red component, thus it was used for all shades of red and purple, and occasionally for orange and violet. In the case of the latter colours, it was sometimes qualified as in the expressions *ḥamra mush ḥamra qawi* (not very red), *ḥamra bu şafar* (red with yellow), *aḥmar abjad shwêyâ* (a slightly white red), *aḥmar fataḥ* (light red) in the case of orange and *ḥamra abjad* (white red) and *lûbânî aḥmar shwêyâ* (slightly milk red or blue red) in the case of violet. *Aḥmar* or *aḥmar shwêyâ* were also used for reddish browns. *Aḥmar* was never used for colours which had not an element of red in them.

Aşfar, *şafra*, was used somewhat less definitely. Yellow was nearly always called by this name which was also often used for orange. *Aşfar* was also used for green by one or two individuals who were certainly not colour-blind. It was very frequently used for brown either alone or in such forms as *aşfar shwêyâ*, *nuşş aşfar* (half yellow) and *aşfar mush ketîr* (not very yellow). It was also often used for faint reds, thus, in Card III of Nagel's test, about half the individuals called the more saturated pink *ḥamra*, and the less saturated *şafra*; in these cases I covered up the card so that only one of the less saturated discs could be seen and most then called this disc *ḥamra*, but when a less saturated pink was seen together with a more saturated disc of the same colour, there was a very strong tendency to call the former *şafra*. The same happened with a few individuals in the case of Card XII. *Aşfar* was also used for Holmgren's pale green test wool. There seemed to be a tendency to use the word *aşfar* as a term for light, unsaturated colours, especially in contrast to red.

Akhḍar, *khadra*, was used less definitely than *asfar*. It was the common term applied to green of all shades. It was used for Rothe's blue-green paper by about half the individuals questioned, and it was very often applied to blue and occasionally to indigo. It was also used several times for browns which had no element of green in them, and by a few individuals for dull black and dark grey. There seemed to be a distinct tendency to use this word for all darkish colours other than red and yellow.

Azraq, *zarga*, was used most often for black. Rothe's indigo and violet papers were occasionally given this name, which was never applied to the light blue paper or to a blue wool. Blue-green was only once called *azraq*, but this word was used by six individuals for brown. With Nagel's cards *azraq* was used for the darkest dots and seems to have been regarded as a term for black and for very dark colours. Black was once called *azraq fami*, charcoal blue or charcoal black.

Iswid,¹ *sōda*, was used for black, dark grey, dark brown, indigo, and violet, and occasionally for fairly light blues. By one individual Rothe's indigo paper was called *sōda khālis* (perfect black). From the way in which they were employed by the people in question, this word and *azraq* might be regarded as synonyms. It almost seemed as if *azraq* were used for darker colours and shades than *iswid*, for in Nagel's Card IX, some individuals called the darker dots "*azraq*" and the lighter dots "*iswid*."

Abjad, *bēda*, was only used for white, light grey, and for very light colours. It was often used for Holmgren's light green test wool, and still more often for the violet test wool. Light browns were also given this name.

Asmar, *samra*, occurred very rarely. One man called blue, "*asmar*," and three gave this name to dark grey or black. It was not used for brown by a single individual.

In addition to the above colour terms, a large number of others were used which were formed by adding "*ī*" to the names of various objects. I will give these as nearly as possible in the order of the frequency with which they occurred.

Koḥalī, derived from *Koḥl*, the antimony dye with which the eyes are painted, was very commonly used for black, indigo, violet, and also for dark grey and dark brown. It was used in exactly the same way as *iswid* and *azraq*. *Ikḥal*, applied to the same colours is, no doubt, another form of the same word.

Lābānī,² derived from *lābān*, milk, was the word most often applied to blue. It was used by about half the people tested for blue-green and occasionally for green. It was also applied to both indigo and violet and less frequently to brown and grey. It was twice used for pink by individuals who were not colour-blind. It was often used for the blue, grey, and light green dots in Nagel's cards.

Ighbash, or more commonly *ghabshī*, was very frequently used for grey and for light colours, especially for those of Nagel's cards.

¹ This word was pronounced very diversely. I heard it called *iswid*, *iswad*, *aswad*, *aswid*, *eswad*. The feminine was also called *sōdī*, quite as often as *sōda*.

² This word was perhaps more often pronounced *lebēni*, *lībēni*, or *ilbēni*.

Ighbar and *ghabrî*, derived from *ghabr*, dust, were also frequently used in the same way.

Etrâbî, derived from *turâb*, dust, was given for grey, black, and brown, and rarely for blue and blue-green.

Bunnî, derived from *bunn*, coffee bean, was often used for brown. It was also applied to grey and violet.

Ṣafi or *ṣâfi*, meaning clear or transparent, was occasionally given for blue, green, and grey, and once for brown. It was also used to qualify other words as *lâbânî ṣafi* for blue-green.

Samâwî,¹ derived from *samâ*, sky, was used by a few men for light blue and once for indigo. Brown was once called *samâwî ghâmiḍ* or '*amiq*, '*amîq* (dark sky colour).

'*Asalî*, from '*asal*, honey, was rarely used for orange, brown, and pink.

Ghuslî (? derivation) was used occasionally for red, orange, and violet.

Qahwî, from *qahwâ*, coffee, was used occasionally for red, orange, and yellow. It was not applied to brown.

Ṭarâbîshî, from *ṭarâbush*, fez cap, was used occasionally for red, sometimes alone and sometimes combined with *aḥmar*. It was once applied to grey.

Manawîshi was used by a few individuals for both pink and blue.

Khoshag was used occasionally for brown and once or twice for pink.

Ruṣṣâṣî, from *ruṣṣâs*, lead, was used for brown and grey and once for green.

Ḥadîdî, from *ḥadîd*, iron, was used once for grey.

Zibḍî, from *zibḍa*, butter, was used twice for grey.

Qulalî, from *qulla*, pl. *qulal*, earthen waterbottle, was used for yellow.

Ramlî, from *raml*, sand, was once used for brown.

Other words were occasionally used which may be corruptions of foreign words; thus, brown was once called *smanti*, probably from cement, and grey was once called *shagelat*, possibly chocolate. Yellow was once called *karantina asfar*, quarantine yellow, by a man who had worked on the Suez Canal. White and black were occasionally qualified by *Madrasî* and the words *Malakan* or *Manakan* (American) were occasionally used, as when a grey paper was called *Manakan asmar*. Two men called blue *ṣînî*, Chinese.

In the language employed for colour by these peasants of Upper Egypt, we find exactly the same features as those which characterize primitive colour nomenclature in other parts of the world. There was a very definite word for red, *aḥmar*, which was not only applied to objects which we should definitely distinguish as red, but also to colours such as orange, purple, violet, and brown, which contain a red element. There was a somewhat less definite term for yellow, *asfar*, which was also used for orange and brown and was occasionally applied to green and to faint red. The word for green, *akhḍar*, was still less definite, being very often applied to blue, violet, grey, and brown. There was no definite word

¹ Magnus states (*Untersuch. ii. d. Farbensinn d. Naturvölker*) that this word has been borrowed from Arabic by the Berbers, who use it as a term for blue.

for blue. The word, *azraq*, usually regarded as the Arabic term for blue, was never used by these people for light blue and was applied by them more frequently to black than to an indigo blue.¹ This word and the proper Arabic term for black, *iswid*, were used indiscriminately for black, blue, and violet, and also for dark brown. Other words as *koḥalî*, *ighbar*, and *etrâbi*, were used both for black and blue or for grey and blue. The nearest approach to a word for blue was *lâbûnî* milk colour, which was, however, often used also for green, grey, and brown. The word *samâwî*, derived from the colour of the sky, was only used by two or three individuals and was also used for brown.

The decreasing definiteness in the nomenclature for colour as one goes from red through yellow and green to blue, was as marked in these peasants of Upper Egypt as it is in the Papuans of Torres Straits and in so many other savage and semi-civilized races.

Another feature of the Egyptian language for colour is the absence of a word for brown. The proper Arabic term for brown, *asmar*, was never once used for this colour, though occasionally applied to blue and grey. It is interesting that Mlle. de Claury² found that the natives of Algeria seemed also to be unacquainted with "*asmar*" as a word for brown and applied to brown objects the words for black or yellow.

As I have found in other languages, there was more variety in the terms applied to brown than to any other colour, over twenty different terms being given to brown papers and wools. The word most commonly used was *aḥmar*. *Aṣfar* had the second place. The word which came third in order of frequency was *bunnî*, coffee-berry colour. This word is given as meaning brown in Voller's *Glossary*, and is certainly the nearest approach to a word for brown among the people with whom I had to do, but it was very far from being generally used as a term for brown in the way that *aḥmar* was used for red and *aṣfar* for yellow, and only by one man was it used with any consistency for all browns, most people calling one brown *bunnî*, another *aḥmar*, a third *iswid*, and so on. *Bunnî* was also applied to grey and violet as well as to brown, and cannot be regarded as a distinctive name for the last colour.

A feature of which I have observed indications in other languages, came out in a very marked way in the nomenclature of these people, viz., the tendency to use words denoting differences of colour-tone for differences of shade, i.e., of luminosity. There was a tendency to use *akhḍar* not only for green, but also for all colours (except red and yellow) of a certain degree of darkness. There was a similar tendency to use *azraq* and *iswid* for all very dark colours.³

¹ It is probable that "*Baḥr el azraq*" should properly be translated "the dark Nile," and that when we speak of "the Blue Nile," we are employing a term which is due to the tendency to confuse blue and dark in Arabic colour nomenclature.

² *Bull. de la Soc. d'Anthropol. de Paris*, t. ix, p. 698, 1886.

³ This tendency is shown in the epithets commonly applied to donkeys. Thus very dark donkeys may be called "*azraq*," while lighter donkeys are spoken of as "*akhḍar*."

The tendency to use names for different colours to denote differences of brightness was most marked with Nagel's cards. In card No. V, there are three dots of the same greenish colour-tone which differ from one another in brightness, giving three shades of one colour. These three dots were very commonly denoted by three different words as *lābānī*, *akhḍar*, *iswid*, or *ighbash*, *akhḍar*, *azraq*. In card No. III, very many individuals called the more saturated pink, *aḥmar*, and the less saturated, *aṣfar*, although most, when shown the latter alone, recognized it also as *aḥmar*. Nagel's test is especially adapted to bring out this feature of colour nomenclature, and it is possible that I have found this tendency more marked in the Arabic of the Egyptian peasant than in other languages because I was using this test for the first time.

The existence of this tendency to use names of different colours to denote differences of shade is of considerable interest in connection with the colour nomenclature of ancient literature. Gladstone¹ and others have pointed out that Homer used colour-names, or words which became later colour-names, to denote differences of brightness, and supposed in consequence that the colour sense of Homer was undeveloped, but that he had a highly developed degree of sensibility for difference of brightness. The colour nomenclature of the fellāhin of Upper Egypt appears to show exactly the same kind of peculiarity as that noted by Gladstone in Homer, a peculiarity which is far from being associated in them with absence of the colour sense.

Examination for Colour Blindness.

I examined forty-three men and boys at El Amrah. Some of them were absolutely normal in their behaviour with Holmgren's wools. Others made the same kind of matches with which I had become familiar in Torres Straits and elsewhere, *i.e.*, they behaved normally with the red, pink, and yellow test-wools, but compared green with blue, and blue with violet. With Holmgren's pale green test-wool they were inclined to put wools of any colour, even pink, if very faintly coloured, *i.e.*, they tended to match according to saturation rather than according to colour tone, and the same tendency was found in the matches made with a pale violet test-wool. Owing to the fact that I first met with this mode of matching in Torres Straits, I am accustomed to speak of it as the Torres Straits type.

Two men were definite examples of the common form of colour blindness. One, Ali Ibrahim, began by matching green wools with the red test. He matched Holmgren's pink test with blue and violet; he matched yellow with greenish yellows, blue with greenish blues and violets, and violet with blue and pink wools. On repeating the tests, the same kind of errors were made. He called Rothe's yellow-green paper *ḥamra*, the red test wool *ṣafra*, and green and yellow wools *ḥamra*. In Nagel's test-cards, he consistently called the pink dots *koḥalī*, and the yellow dots *ḥamra*. He called the 1·5 red glass of Lovibond's Tintometer *khadra*, the 1·0 red glass *ṣafra*, and the 1·0 blue glass *ḥamra*.

¹ *Studies on Homer and the Homeric Age* 1858, vol. iii, p. 457.

Another man, Ali Ayab, matched red with green, green with brown, pink with blue and violet, Holmgren's green with pink, blue with purple and violet with pink. He made characteristic mistakes in naming the colour of papers, wools, Nagel's test dots, and the tintometer glasses.

Nine other individuals resembled many of those tested by Mr. Randall-MacIver, and made matches or comparisons which, if made by a European, would strongly suggest defectiveness of the colour sense.

Three of these, Mohammed Smain Birias, Smain Hassan and Ahmed Bukr, definitely matched the pink test with violet or purple wools and two of them also matched red and brown. Their other matches were, however, good or of the Torres Straits type, and were not of the kind made by red-green blind individuals. They were able to name all the pink dots of Nagel's test-cards correctly, and none of the names used were suggestive of red-green blindness. They were able to distinguish the glasses of the tintometer readily, the thresholds for red being '40, '40, and '20 respectively as compared with 1'20, 1'20, and '80, the thresholds for blue.¹

Five others did not actually match the pink test with violet wools but only compared the two colours. One of them also compared violet and brown. Their other matches were of the Torres Straits type, and their behaviour with Nagel's test and the tintometer was absolutely normal.

One other individual, Ali Hassan, was more doubtful. His actual matches were normal, but he compared the pink test with the blue and violet wools in a very suspicious manner. He was, however, able to name Nagel's dots correctly. I put his threshold for red somewhat high, viz. '50, but he almost passed at '30 (7 times in 10). He was one of those who had been tested a year previously by Mr. Randall-MacIver, and from the results of this examination I had put him down as probably having weakness of the red-green sense.

There are several possibilities in connection with these nine individuals. It is possible that they were in some slight degree colour-blind. This seems, however, to me very unlikely; they were able to recognize correctly the colours of the dots in Nagel's test, colours especially chosen to deceive the colour-blind. Further, they were able to recognize very faint glasses in the tintometer, far below the limit at which Europeans with weakness of the colour sense go wrong. I have found that this test is a very delicate means of detecting weakness of the red-green sense; individuals who are able to match Holmgren's wools and to pass Nagel's test, fail to distinguish the red from the blue glasses of the tintometer at certain intensities depending on the degree of weakness of colour vision.

Another possibility is that the defective matches and comparisons were due to the influence of language. The wools they tended especially to confuse were red with brown and pink with violet. They also occasionally matched pink and violet with brown. There is no doubt that all these wools were often given the same name, viz., *ahmar*, not only by the individuals in question but by others

¹ See p. 241.

whose matches were in no way suspicious, and I believe that the fact that these colours were confused was largely due to the influence of language, to the tendency to put together wools which the people would be in the habit of associating together on the ground of similarity of nomenclature.

In working elsewhere, I have met with a similar tendency to put together wools which would receive the same name. Thus in Torres Straits, as I have already mentioned, men would often match wools of any colour, but of faint saturation, with Holmgren's pale green test, and on these occasions I have heard them saying to themselves their word for "white" as they picked up the wools. In order to diminish the influence of language as much as possible, it is always my custom to examine with Holmgren's wools before entering on the investigation of the colour vocabulary, and I always scrupulously avoid mentioning the names of colours while explaining the test; but in spite of all precautions, it is impossible to prevent people from thinking of the names of the colours they are choosing and from being influenced thereby.

There is another reason why pink and violet should tend to be matched more readily by these people than by Europeans. I have shown¹ that there is reason to believe that some races have a certain degree of insensibility to blue, and I shall presently endeavour to show that these natives of Upper Egypt have a similar degree of insensitiveness to this colour. Each of the colours, pink and violet, contain both red and blue. They are confused by individuals with weakness of the red-green sense, because being insensitive to the red element in each, these individuals only see the blue component of each colour. In red-green blindness, the two wools probably appear as two shades or tints of blue. It is obvious that insensitiveness to blue would produce the same tendency to confusion. Both colours would appear more red, and would resemble one another more closely than to the normal eye, and I think it probable that this is a subsidiary factor, or possibly as important a factor as the influence of language, in leading these people to confuse pink and violet.

Whatever may be the true explanation of these defective matches, there is one practical conclusion about which there can be no doubt, viz., that Holmgren's wool test may, in the case of some races at any rate, be wholly insufficient as a means of diagnosing colour blindness. There is little doubt that among ourselves the test sometimes fails to detect the slighter degrees of colour blindness. In savage or semi-civilized races, I believe that Holmgren's test will probably always enable one to detect colour blindness when it exists, chiefly because the concomitant insensitiveness to (or lack of interest in) blue, which is so frequently found in such races, increases the difficulty of matching.

The defect of Holmgren's test, as an ethnographical method, is firstly that a confusion of colours which in a European certainly means insensitiveness to red, may in other races be due to insensitiveness to (or lack of interest in) blue

¹ *Rep. Camb. Anthropol. Exp.*, vol. ii, p. 73.

Secondly, the peculiar defects which characterize the language for colour in nearly all savage and semi-civilized races may be of influence in the process of matching, and may lead to confusions in this process which are in Europeans characteristic of colour blindness.

In addition to the forty-three individuals examined at El Amrah, I was also able, by the kindness of Professor Flinders Petrie and Mr. Mace, to examine at El Arabah ten men who had been tested a year previously by Mr. Randall-MacIver, and had been found to be suspicious. Two of these men were certainly colour blind. One, Erfai, matched red with browns and greens, pink with violets and blues, Holmgren's green test with brownish and pinkish wools, and blue with pink and violets. He called most of the red dots in Nagel's test *akhḍar*, and called the darker dots of any colour *ahmar*.

The other, Hamdan Yusuf, made matches which were perfectly characteristic of colour blindness of the ordinary form, but succeeded in naming most of Nagel's dots correctly, though he called one pink *azraq* and another *saḡra*.

A third man, Smain ab Amad, made matches which were in the highest degree suggestive of red-green blindness. He began by matching reds and greens, but I came to the conclusion that he did not properly understand what he had to do, and on a later trial he matched red correctly. He confused pink, however, with blue and blue-green. He matched Holmgren's green test with both yellow and blueish wools, and matched a blue wool with violet and brown. The latter confusion is not in any way characteristic of red-green blindness, but is of the kind that might be due to the influence of language. He called a pink wool *lābāni*, but was able to name all the dots of Nagel's cards correctly. I was not able to test him with the tintometer, and in the absence of this test I was quite unable to make up my mind whether he was colour blind or whether his defective matches were due, partly to the influence of language, partly to misunderstanding of the method. Six of the others made the same kind of matches which I have already fully considered in connection with the people tested at El Amrah. They confused red with brown or pink with violet, or both, and I believe that their confusions were due to the causes I have already considered. One of them, Abadeh Musi, was rather more suspicious than the rest, picking up and comparing a blue wool with the pink test and a pink wool with the blue test, but he only definitely matched pink with violet, and was able to name papers, wools and Nagel's dots perfectly correctly.

The remaining two men tested at El Arabah were normal.

The people examined were too few in number to allow one to say anything definite as to the percentage of colour-blind individuals. At El Amrah I tested forty-three individuals, of whom two were certainly colour blind. Of the fifty individuals, tested by Mr. Randall-MacIver, two were certainly colour blind, while others had possibly some weakness of the red-green sense. Altogether eighty natives of Upper Egypt were tested by Mr. Randall-MacIver and myself, of whom twenty-two were tested by both of us. Of these eighty individuals, four were

certainly colour blind while others were doubtful. This proportion of 5 per cent, is larger than that existing in most European populations, viz., about 4 per cent., and if one takes into account the doubtful individuals, the results seem to indicate that there is a somewhat larger percentage of colour blindness in Upper Egypt than in European races. I have elsewhere¹ shown that colour blindness may be absent, or almost absent, in some races while in others it may apparently be more frequent than in Europe, and I have suggested that the existence or absence of colour blindness may possibly be a guide to ethnic affinities. If future researches show that colour blindness is relatively common in the race of Upper Egypt, one will have advanced one step further in the study of this problem.² I am not aware of any other researches on the colour vision of Egyptian races, though a number of observations have been recorded on Nubians.³ Rabl-Ruckhard⁴ quotes de la Renouidière as having examined six hundred and ninety-three Algerian adults of whom 3·4 per cent. were colour blind. This observer only tested by asking the names of colours, and his results must therefore be accepted with caution.

Colour Thresholds.

I used Lovibond's Tintometer to determine the thresholds for red, yellow and blue, as I had previously done in Murray Island.⁵ This apparatus consists of a long box at the end of which are two apertures either of which may be given any degree of coloration by placing before it one of three series of glasses very delicately graded in the three colours, red, yellow and blue. The method was exactly the same as that employed in Murray Island, with one exception, viz., that I began by showing the natives glasses of a high degree of coloration. In this way one began by giving them a good idea of the colours for which they were to look and the strengths of the glasses were then diminished till the colours could no longer be recognized. The threshold was determined when the colour of a glass was correctly recognized four times in five, though very often ten observations were made with the final glass, in which case two mistakes were allowed.

I give the record of one man, Ahmed Aissa, to illustrate the procedure. This man recognized ·20 red four times in five, but was only right seven times in ten observations with the ·15 glass. He was right every time with ·30 yellow, but was quite unable to recognize the ·20 glass of this colour. The blue glass 1·0 he called *iswid* (black) three times, *akhḍar* (green) once, and the fifth time did not recognize that there was any colour on the side in which the glass had been put, but called

¹ *Op. cit.*, p. 94.

² It is, perhaps, worth mention in this connection that colour blindness has been found to be somewhat more common among Jews than among the general population of Europe. See *Trans. Ophthalmol. Soc.*, vol. i, p. 191, 1881.

³ *Zeitsch. f. Ethnol.*, Bd. x and xi.

⁴ *Ibid.*, Bd. XII, S. 210, 1880.

⁵ *Op. cit.*, p. 70.

the opposite hole *abjad* (white). Since pronounced blues were often called both *iswid* and *akhḍar*, I passed these answers and proceeded to test with '80, which he recognized as *lābānī* four times in five observations. The '60 glass he twice called white and the '70 glass was also called *abjad* (white) five times in ten observations, and I therefore put down his threshold at '80. If I had rejected *iswid* and *akhḍar*

Aḥmed Aissa.

Red.	Yellow.	Blue.
1·0 <i>aḥmar</i>	1·0 <i>aṣfar</i>	1·00 <i>lābānī</i>
·50 "	·50 <i>akhḍar</i>	·50 <i>abjad</i>
·50 "	·50 <i>lābānī</i>	·70 <i>ikhal</i>
·40 "	·60 <i>akhḍar</i>	·70 <i>abjad</i>
·40 "	·60 "	1·0 <i>abjad</i> (W)
·30 <i>abjad</i>	·50 <i>aṣfar</i>	1·0 <i>iswid</i>
·40 <i>aḥmar</i>	·50 "	1·0 "
·40 "	·50 "	1·0 "
·30 "	·40 "	1·0 <i>akhḍar</i>
·30 "	·40 "	·80 <i>lābānī</i>
·30 "	·40 "	·80 <i>abjad</i>
·30 "	·40 "	·80 <i>lābānī</i>
·20 <i>abjad</i>	·30 "	·80 "
·20 <i>aḥmar</i>	·30 "	·80 "
·20 "	·30 "	·60 "
·20 "	·30 "	·60 <i>abjad</i>
·20 "	·30 "	·60 <i>iswid</i>
·15 "	·20 <i>abjad</i>	·60 "
·15 "	·20 <i>aṣfar</i>	·60 <i>abjad</i>
·15 <i>abjad</i>	·20 <i>aḥmar</i>	·70 <i>lābānī</i>
·15 <i>aḥmar</i>	·20 <i>abjad</i>	·70 <i>abjad</i>
·15 "		·70 <i>lābānī</i>
·15 <i>abjad</i>		·70 "
·15 <i>aḥmar</i>		·70 <i>abjad</i>
·15 "		·70 "
·15 "		·70 <i>akhḍar</i>
·15 <i>abjad</i>		·70 <i>lābānī</i>
		·70 <i>abjad</i>
		·70 "
Red '20.	Yellow '30.	Blue '80.

as correct names for blue, I should have had to put the thresholds of these people for blue very much higher than I have done. In Table I, therefore, the figures given indicate the glass next above that which was called white more often than once in five observations. There was a general tendency to call the stronger blue

TABLE I.

NAME.	Red.	Yellow.	Blue.
Maḥmud Moḥammed	10	10	60
Moḥammed Khudir	60	40	150
Moḥammed Smain Birias	40	30	120
Aḥmed Aissa	20	30	80
Moḥammed Aissa	20	30	120
Moḥammed Aḥmed	10	10	30
Abdullah abd el Muli... ..	10	20	30
Moḥammed abd el Muli	15	10	20
Mursi abd el Muli	15	10	20
Sadik	40	30	80
Moḥammed Hassan	10	20	150
Hassan Yusuf	10	20	30
Hassan Abderahim	40	30	90
Moḥammed Ḥamed	40	30	90
Ali Agiadi	40	30	120
Aḥmed Bukr	20	20	80
Ali Hassan	50	15	80
Moḥammed abu Selim	10	5	60
Moḥammed Ali	40	40	100
Moḥammed Said	30	50	90
Ibrahim Ibrahim	40	40	50
Moḥammed Musi	60	50	200
Moḥammed Ḥamed	40	20	120
Moḥammed Ramdan	20	15	60
Abdullah Moḥammed... ..	15	30	70
Smain Hassan	40	40	120
Average	28·65	25·96	85·4
Maximum	60	50	200
Minimum	10	5	20
M.V.	14·42	10·5	34·26
$\frac{M.V.}{A.}$	·503	·404	·401

glasses *iswid* or *kohalî*, and to call the fainter glasses *lûbânî*. The extreme indefiniteness of nomenclature for blue makes it very difficult to know how much importance to attach to these observations, but I think one is justified in supposing that when a glass was called white by these people, the colour was not recognized.

In Table I, I have omitted the decimal points before the numbers of the glasses, so that a threshold of 10 means that the man in question could distinguish ·10 according to Lovibond's graduation.

It will be seen from this table that, on the average, yellow was recognized at a slightly lower strength than red. The difference is very slight, but is present in both maximum and minimum, as well as in the average. Blue had to be much more intense than either red or yellow in order to be recognized. I have already said that I only rejected the answers for this colour, either when they failed to recognize that there was any glass at all in the instrument, or when they called the glass *abjad*. If I had also regarded the names *iswid* and *kohalî* (black) as incorrect, the thresholds for this colour would have been very much higher.

The figures in the last line but one give the mean variations of the results for the different individuals from the average result. The figures show that the twenty-six individuals examined differed from each other least in the case of yellow, the colour for which they were most sensitive, and differed most in the case of blue, the colour for which they were least sensitive.

The mean variation may be taken as an index of the degree of variability of the individuals of a group, and in this case it is probably most satisfactory to take the mean variation in relation to the average, and in the last line I have given the figures representing this relation, $\frac{M.V.}{A.}$. In the case of red, the mean variation was rather more than half the average, in the case of yellow and blue rather more than 40 per cent. of the average.

In the following comparative table I have given the results for the twenty-six natives of Upper Egypt together with those for eighteen natives of Murray Island in Torres Straits and eighteen English men and boys, all being tested by the same instrument in the same manner:—

TABLE II.
COMPARATIVE RESULTS.

Race.	Red.	M.V.	$\frac{M.V.}{A.}$	Yellow.	M.V.	$\frac{M.V.}{A.}$	Blue.	M.V.	$\frac{M.V.}{A.}$
Egyptian	28·6	14·42	·503	26·0	10·5	·404	85·4	34·3	·401
Murray Island	17·6	7·66	·435	26·5	9·71	·366	60·0	16·5	·275
English ...	31·7	22·5	·710	20·5	8·11	·395	36·4	15·1	·415

It will be seen from this comparative table that the *fellâhin* of Upper Egypt resembled the English observers in being less sensitive to red than to yellow. They differed from the Murray Islanders in this respect, but agreed with these people in their marked insensitiveness to blue. The Egyptians seem to occupy an intermediate position between the Englishmen and the Papuans, resembling the former in one respect and the latter in another. The behaviour as regards red acquires some significance in connection with the fact that the cases of marked insensitiveness to red (red-green blindness or red-green weakness) which occur in both England and Egypt were absent in Torres Straits.¹ The existence of colour-blindness in both Egyptians and Englishmen appears to be accompanied by a certain degree of general insensitiveness to red as compared with Papuans.

The Egyptian and Murray Island records for blue are not exactly comparable in one respect. The Murray Islanders had no native word for blue, but they had adopted the English word in the form of *bulubulu*, and most of the natives used this word consistently for blue. These people had a word which they used definitely and consistently for blue, and therefore one had every reason to believe that when they saw blue in the tintometer they were able to express the fact.

The use of a "loan" word for blue has made the colour vocabulary of the Murray Islander distinctly superior to that of the Egyptian peasant, and the fact that so many designations were given to blue by the latter makes it very difficult to assign a proper value to their results. I have assumed that these people failed to see the colour when they called it white, but I fully recognize that this assumption does not rest on a very secure basis, and that the results may possibly have been due to lack of interest in, rather than to true insensitiveness to blue. Still the fact remains that the *fellâhin* of Upper Egypt and the Papuans of Murray Island, who have closely similar defects of colour language, also behave in the same way when tested with the tintometer and call a blue glass "white" which to the European eye is strongly coloured, while they are able to give suitable names to red and yellow glasses of about the same degree of coloration, or even lower degrees of coloration, than those at which English observers recognize these colours.

The behaviour of the natives of Upper Egypt, both with Holmgren's wools and with the tintometer, illustrates very well the difficulties which defective colour nomenclature introduces into the objective examination of the colour sense. The observations, however, as a whole point with considerable probability to the existence of a certain degree of defective sensibility to blue as compared with red and yellow and tend to confirm the conclusions at which I have arrived from observations elsewhere, that defective nomenclature for blue may be associated with a certain degree of defective sensibility for this colour.

¹ No case was found in 150 individuals.

The defective nomenclature for colour employed by these peasants of Upper Egypt is of considerable interest in relation to the problem of the connection between colour language and colour sense. I have elsewhere¹ pointed out that any defect of colour sense which has so far been found in savage and semi-civilized races can only partially explain the great defects of colour nomenclature which are found so widely throughout the world. These defects, especially in the nomenclature for green and blue, are found not only in the languages of savage and barbarous people, but in some of the languages spoken in civilized countries.

One of the factors which has been brought forward to explain the defective nomenclature for blue is the absence of blue pigments and of blue objects of interest among many races, and it is probable that this is one of the causes which have contributed to produce the defect. In the case of these Egyptian peasants we have, however, to do with people who are well acquainted with blue objects, and who were often, at the time that I examined them, wearing blue clothes. Further, they are the inhabitants of a country in the ancient history of which blue occupied the most prominent position in decorative art, and yet among these people one finds exactly the same defects of colour nomenclature which are found among the lowest savages and in races totally unacquainted with blue pigments.

In the case of these Egyptian peasants we have also an example of people speaking a language in which there is a recognized term for blue, and yet this term is used by them indiscriminately for both dark blue and black. I have not had the opportunity of discovering whether defects of language similar to those which I have described would be found among educated Egyptians. It is probable that such defects may survive among the peasants of a country long after they have disappeared from the speech of the more cultivated classes, and Kirchhoff gives a very good illustration of this from Germany,² where in some parts there is still evidence of the confusion between violet and brown which is very common in more primitive races. It is among the peasants of a civilized country that one should look for the features of colour language which I have described.

In the ancient language of Egypt it is said that there were definite words for both green and blue, and the decorative art of ancient Egypt can leave no doubt in the mind of anyone that there was a comparatively high degree of development of the colour sense corresponding to this high degree of development of colour nomenclature. The Egyptian peasant may have lost this highly developed colour vocabulary, and possibly to some extent also may have degenerated in his colour sense. It is, on the other hand, possible, and there seem to be other reasons in favour of the possibility, that the various civilizations

¹ *Popular Science Monthly*, vol. lix, p. 44, 1901.

² *Das Ausland*, S. 546, 1883.

of Egypt may have passed over the heads of the *fellāhin* without affecting their mental development in any marked degree, and that they continue to have the same primitive ideas of colour which their ancestors had several thousand years ago, just as they continue to use the *shādūf* to irrigate their fields. It is possible that when the native of Egypt began to use the Arabic language he carried over into this the same features which characterized his previous tongue, whatever that may have been.

DISCUSSION.¹

Professor SULLY, after paying a tribute to the interesting and valuable line of work undertaken by Dr. Rivers, suggested that in testing the colour sense of savages the element of uncertainty introduced by nomenclature might be eliminated by the use of a supplementary method. Young children might be selected, and a definite tint, *e.g.*, a blue, set before them as a standard tint, and carefully observed and named. Then the tinted glasses might be employed, and the point determined at which the child was able to recognize the colour as the same as the standard tint. This last should be kept before the child and be referred to if necessary. He would have been glad to hear from Dr. Rivers whether the savages examined by him employed different names for bright and dark shades of the same colour. From his observations of children, and from the reasonable hypothesis that colour discrimination developed in the race out of discrimination of light intensities, he should expect to find that this was a characteristic of the nomenclatures of savage races.

MR. McDUGALL: Dr. Rivers' very interesting observations seem to fall into line with and indeed to form by far the most important part of a considerable mass of evidence drawn from very various sources. From this mass of evidence some authors have drawn the conclusion that our capacity of experiencing the sensation of blue is a comparatively modern accomplishment, that it has been much more recently acquired than the sensations given by the light of the other end of the spectrum. Dr. Rivers seems inclined to accept this conclusion as in some degree true. I happen to be interested in maintaining a different view of the course of evolution of our colour sense, and I wish therefore to point out that all the evidence from which this conclusion has been drawn is possibly capable of bearing a different interpretation. If we compare our colour sensations introspectively, I think most of us will admit that there attaches to the warm colours a more emotional interest, a greater affective value, than to the cold tones. Both Mr. Havelock Ellis and the late Mr. Grant Allen have brought together from various sources, largely from the examination of works of art, conclusive evidence of this greater emotional or æsthetic value of the warm colours. I would suggest that in this fact we may perhaps have the key to the true explanation of the apparent indifference of primitive folk to blue tones and their lack of names for them, and possibly even to the results of Dr. Rivers' exact observations. Savage and primitive men will naturally give their attention to the more emotional

¹ Some of the points raised in the discussion refer to remarks on the general problem of the colour sense with which Dr. Rivers concluded his paper.

colours, neglecting others, and so will educate their sense of red, while neglecting their sense of blue. We know that their pigments are mostly reds and yellows, and so were Sir Joshua Reynolds'. I do not think, however, that the less affective value of blue is a valid ground for regarding the sense for blue as a more recent growth. The converse might, perhaps, be argued with greater force from analogy with other senses. Thus it seems fairly certain that the hearing of noises is a more primitive faculty than the appreciation of tones, that simple touch is older than the sense of temperature, and so on. My own work on colour vision has led me to suggest the view that primitive vision corresponded to our sense of grey, that our senses for blue and yellow became differentiated as the affections produced by the light of the two ends of the spectrum, and that at a later period the senses of red and green became differentiated in a similar way from the sense of yellow. The facts of colour blindness and the distribution of colour sense in the periphery of the retina (as generally accepted) fit well with this scheme of development. The evidence from children is very mixed, but Professor Baldwin, whose results are at least as trustworthy as any others, and refer to a child of only nine months old (an age earlier than others have attempted to deal with), finds that red, blue, and white seemed to be almost equally attractive, while green was very much less so. The chief objection to this scheme seems to be evidence of the kind that Dr. Rivers has brought forward this evening, and it was for this reason that I wished to point out a possible mode of escape from the conclusion that he seems inclined to accept.

Dr. C. S. MYERS offered a further example of the independence of defective nomenclature and sensation gathered from his experiments upon the sense of taste among the Murray Islanders. These people possessed names for sweet, acid, and salt tastes, but evidently knew no word to describe the bitterness of quinine, while their extreme dislike of it was no less obvious.

Dr. EDRIDGE-GREEN said that, in his opinion, the only reliable method for scientific purposes of ascertaining the colour perception of an individual was the spectroscope, and he would like to know whether Dr. Rivers had employed this method. He had pointed out the defects of the Holmgren test in a paper read before the Royal Society more than ten years ago, and that Society appointed a committee who recommended this test, though at the present time the defects of the test were well known and acknowledged even by those who had previously supported it most strongly. In addition to the fact that a large number of normal sighted persons had been rejected by the test (over 38 per cent. one year and 42 per cent. another of those who appealed from the decision of the Board of Trade examiners were found to be normal sighted), six distinct varieties of colour blindness might escape detection. Three of these six varieties were dangerously colour blind. Extraordinary as it might seem the test was still the official one of the Board of Trade, but few would credit, unless they had tried, how difficult it was to convince men of a perfectly obvious and easily ascertained fact, when that fact was opposed to their preconceived notions.

Mr. W. H. WINCH: Dr. Rivers' investigations from the linguistic side and his more objective tests seem to give harmonious results. But it has often been objected that investigations from the linguistic side do not necessarily throw light upon colour sensibility, since it is asserted—

1. The sensibility may be there, though the name may not be known to the language,
2. Names may be wrongly applied, even though there is a sensible distinction between the colours named.

Admitting to a limited extent the force of these objections, it seems advisable to endeavour to remove, or at least minimise, the language difficulty by taking a large number of cases in which there is no doubt that the names of the various colours have every chance of being equally known from every point of view, except that of developing sensibility. If in these cases there seems a growth and order of development in colour appreciation, it would appear hardly possible to explain it by defect of language. I have examined a large number of children in infant schools, and hope, as opportunity arises, to test many more, using the coloured balls and beads which are used in the infant schools of the London School Board. The colour names for these are taught equally, but experiment shows that the following, taking a general result from a large number of cases, is the order of development:—white, black (equal), red, blue, green, yellow.

THE RACES OF EARLY EGYPT.

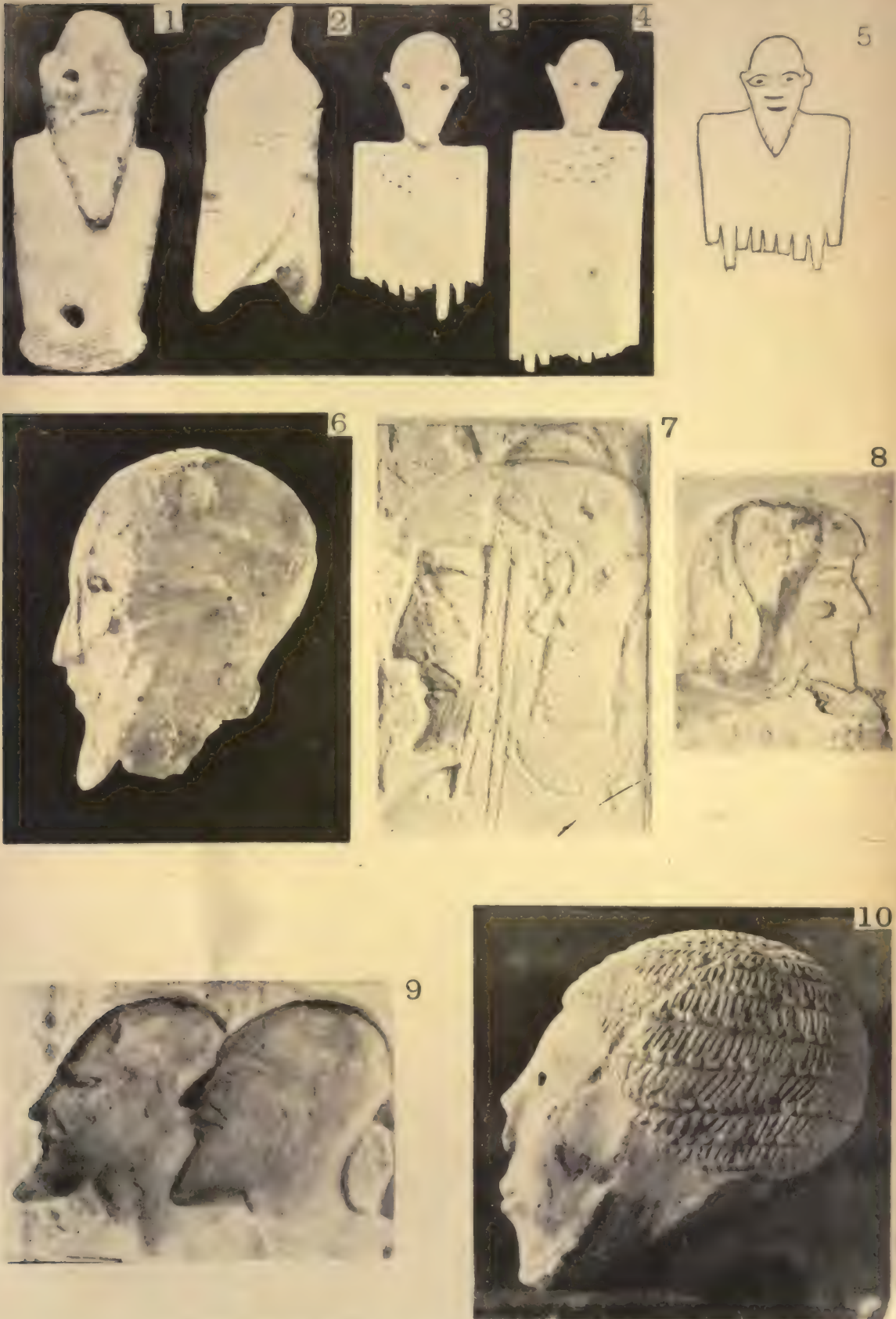
BY W. M. FLINDERS PETRIE, D.C.L., Edwards Professor of Egyptology at
University College, London.

[WITH PLATES XVIII-XX.]

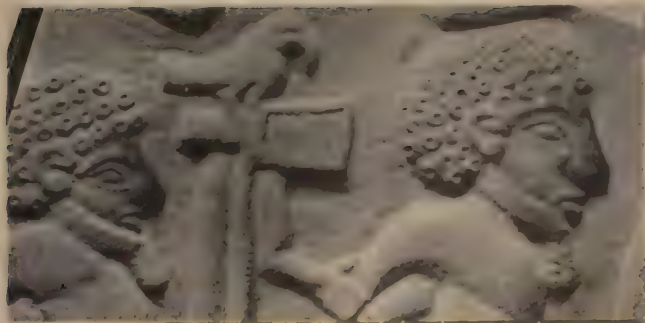
As very various opinions have been expressed lately about the type of the early Egyptians, it is desirable to place together the best data that we yet have for observation. In two respects this subject may yet be amplified: (1) it is hoped that more material of the early dynasties may be forthcoming from the clearance of the early temple site of Abydos, which it is intended shall be done in the next three years; and (2) the comparisons with the types figured on the Egyptian monuments of later ages, with localities stated, may help in connecting the early races with those known otherwise. To undertake stage (2) while stage (1) is yet unaccomplished would be in some cases premature; but to postpone all observation of the variety of race till stage (1) is fulfilled would hinder knowledge. We have enough now to make a first classification, and that is what is brought forward here.

We must disabuse our minds of the prevalent feeling that stepping back a few thousand years will lead us to a simpler condition of races, and that at the present beginning of our information we deal with "purer" races than those around us in the present day. On the contrary, before man was tied down to the permanent possessions of domestication and agriculture he probably roamed and mingled more widely than in historic times. We must expect to deal with mixture of origin as much in 5000 B.C. as in 1900 A.D.

It is unfortunate that the appreciation of portraiture is so blunted at present. The ancient artists showed a keener discrimination than is to be found in most people of intelligence now. Nothing is commoner when differences of features are pointed out to educated people than to see a blank look of distaste, followed by the honest remark that "they all look very much alike, and I can't see where you find the difference." That these differences are not mere accidents of work is shown by the same hand on the same stone, carefully figuring marked differences in one part, and an exact identity of type in another part. It really needs a training of the eye and judgment to make any use of the figures, or to give any opinion worth hearing about them. No one can be an authority on



THE RACES OF EARLY EGYPT. i. THE AQUILINE TYPE (1-10.)



11

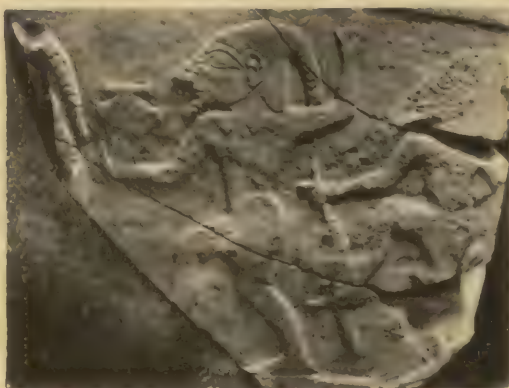


12

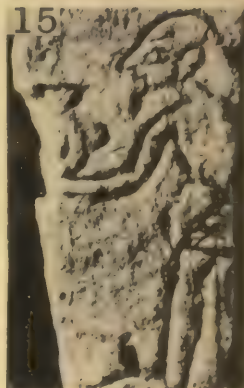
ii. THE PLAITED BEARD TYPE (11-12).



13



14



15

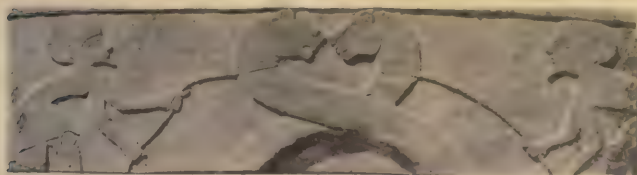
iii. THE POINTED NOSE TYPE (13-15).



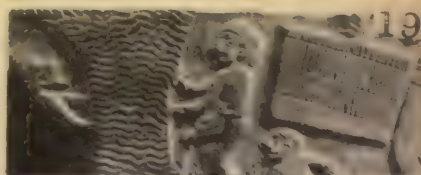
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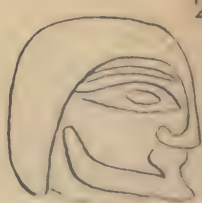
iv. THE TILTED NOSE TYPE (16-19).



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v. THE FORWARD BEARD TYPE (20-22).

23



24



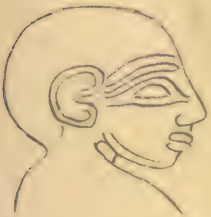
27



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25



vi. THE STRAIGHT-BRIDGED TYPE OF THE DYNASTIC RACE (23-27).

28



29



30



vii. THE MIXED RACE OF THE FOURTH DYNASTY (28-30).



modern pictures and historical portraits without insight and experience; and ancient art and portraiture need at least as much preparation, as they are further from our common knowledge.

SOURCES.—The material for our observations on the early races has all come to light in the last few years. Of the prehistoric age there are several rude figures (see *Nagada*, lix; lx, 21; lxiv, 81; and here Figs. 1 to 5) which all agree in a general type. There are also figures of a very different and steatopygous form (*Nagada*, vi); this probably became mixed with the other type. Of the earliest dynastic times there are the invaluable slate carvings, of which retouched photographs were published in *Journ. Anthropol. Inst.*, xxx, Pls. B, C, D. There are also the ivory carvings, stone figures, and sculptured mace heads from Hierakonpolis (see *Hierakonpolis*, Pls. I, III, V–XII, XV, XXI, XXVI, A, B, C, XXIX, XXXIX). Of the first dynasty there are the ivory-carvings from Abydos (*Royal Tombs*, vol. i, Pls. XII, XIV; vol. ii, Pls. III, A, IV). With later times we do not attempt to deal at present; though it would be highly desirable to have a complete *corpus* of photographs of every head of importance throughout Egyptian history. The references to the figures here given is as follows:—1 to 4, in University College, London; 5, *Nagada*, lix, 5; 6, *Hierakonpolis*, vi, 4; 7 to 9, *Racial Portraits*; 10, *Hierakonpolis*, vi, 1; 11, *Journ. Anthropol. Inst.*, xxx, D; 12, *Journ. Anthropol. Inst.*, xxx, C; 13, *Royal Tombs*, vol. ii, Pl. IV, 5; 14, *Hierakonpolis*, xxvi A; 15, *Royal Tombs*, vol. ii, III A, 2; 16, *Hierakonpolis*, xxix; 17, *Journ. Anthropol. Inst.*, xxx, B; 18, *Hierakonpolis*, xxix; 19, *Hierakonpolis*, xxvi, C; 20 to 22, *Hierakonpolis*, xxix; 23, *Hierakonpolis*, xxvi, C; 24 to 27, *Hierakonpolis*, xxix; 28, *Petrie, History*, i, Fig. 20; 29, *Petrie, History*, i, Fig. 33; 30, *Racial Portraits*. These are only stated to show the position of the originals; in many cases the actual heads shown here are taken from casts.

DATES.—It is essential to observe the relative ages of the various heads, as the condition of the peoples represented was changing from hostility to captivity, and lastly to union with the spreading government of Egypt. The system of sequence dates (described *Journ. Anthropol. Inst.*, xxix, 295, and *Diospolis*, 4–12) is best suited for this, as there will be but one number to observe. But this system must be extended into the early history; and happily the junction of the sequence numbers 30–80 with the history is now fixed; the cylinder jars of King Ka are of the form dated S.D. 78, and those of King Mena are of S.D. 80. Nar-mer therefore between Ka and Mena must be dated S.D. 79. The order of the carved slates (see *Journ. Anthropol. Inst.*, xxx, B, C, D) has not yet been studied; but from the art, and its connection with that of the first dynasty, I believe the order should be (referring to Pls. B, C, D, above):—

IV. Louvre fragment, wiry, over-detailed style ...	...	75
V. Gizeh fragment, similar ...	... ..	76
II. Louvre and British Museum, more free and active...		77
VI. British Museum and Oxford, fine style arising ...		78
I. Gizeh, elaboration of anatomy ...	... ..	79

Purely provisionally, in order to distinguish the sequence quickly, I shall give these the sequence dates last named, 75 to 79, though very likely they may really all belong to 78-79.

The sequence dates of the prehistoric heads are probably about as follows:—No. 2, S.D. 40, and Nos. 3, 4, S.D. 43, judging from similar examples already dated; and No. 5 is about 52. No. 6 was from the great find of ivory at Hierakonpolis, S.D. 79. Nos. 7, 8, 9 are from sculptures of the nineteenth dynasty; No. 10 is probably of S.D. 79.

THE RACES.—In dividing the various types as follows it must not be supposed that they are all separate peoples; some may well be mixtures of others, but the first step is to classify the forms.

1. *The aquiline type*.—Setting aside the steatopygous race, which is only found modelled in the earliest known graves, and which appears to have been early extinct as a separate people in Egypt, there is but one type seen in all the prehistoric figures. Some examples of it are given, Figs. 1, 2, 3, 4, 5; and others in slate, paste, ivory, etc., are only poorer variants. All come from Upper Egypt. The characteristics of this type are the high domed head and pointed beard, the profile being too slight to give much indication. Though this inartistic people did not leave any fine images, yet luckily their artistic conquerors made some excellent ivory carvings, one of which (Fig. 6) is clearly of a man of the usual prehistoric type. There is the same high domed head and pointed beard, with a long nose, which is clearly indicated in the prehistoric head, Fig. 2. The growth of the beard and the high head both mark off these examples from all the other types in Figs. 11 to 30.

Now it so happens that this type is very well known already on later Egyptian monuments. The precise resemblance of Figure 6 to Figures 7 and 8 is beyond question; and the latter represent (7) the Tahennu and (8) the western race in general. For popular convenience we may call them Libyans, a term which covers many allied races. The closely similar physiognomy of the Amorites, Figure 9, points to a common origin; and as these Amorites were a fair people (by the remains of colour on the monuments) they join well with the fair Libyan race. So far, from physiognomy we reach the simple conclusion that North Africa, Egypt, and Syria were occupied by allied tribes of a European character. The head, Figure 10, is apparently of the same race crossed with negro, which has made the hair curly, the lips weak, the beard short, and the outline less orthognathous.

Beside this strong resemblance of type, and the presumption that a race that was on each side of Egypt probably occupied that land at one time, there are still remaining, especially in the pottery and decoration, very strong cultural resemblances between the prehistoric Egyptian and the present Kabyle of Algiers. These have been already detailed by me in *Nagada*, p. 63, and are so generally accepted that we need not re-state the case here.

But lately it has been asserted emphatically that the prehistoric Egyptians were not Libyans, on the ground of asserted differences in the cephalic, the

alveolar, and the nasal index. As this is based on the comparison of two peoples who are over 1,500 miles apart, and with over 7,000 years interval between them, one in mountains, the other in a plain; one by living heads, the other by dead skulls, it is clear that many unstudied data are involved. The fixity of cranial characters is yet quite unknown, and all we can do is to compare a few cases. The alveolar index it is however agreed is similar, both prehistoric Egyptians and modern Kabyles¹ being orthognathous. The nasal index is quite ambiguous, the values being :—

			Nasal In.	Years ago.
Prehistoric Egyptian	...	...	540	7,000
Algerian skulls	...	...	490	2,000 ?
Living Kabyles	...	...	680	0

Thus the Egyptian is between the ancient and modern Algerian. The sole question left therefore is that of the cephalic index. This ranges thus :—

			Ceph. In.	Years ago.
Prehistoric Egyptian	...	...	720	7,000
Algerian (Dolmens and Biskra)	...	...	740	2,000
Living Kabyles	...	...	770	0

Here is at once a suggestion of change in Algeria alone. The index has shifted 15 per 1,000 years (from 740 to 770); and the difference of 4 per 1,000 years (from 720 to 740) between Egypt and Algiers is only a quarter of the rate of change shown in Algiers itself.

Is this change comparable with that in other lands, apart from any serious change of race? In Middle Italy we have a fair case, in one region, not much disturbed by invasions so far south. From Flower's Catalogue we find :—

			Ceph. In.	Years ago.
Aquinum	...	...	790	2,000
Middle Italy, general	...	...	794	2,000
Middle Italy, modern	...	...	802	0

Here there is a change of 5 per 1,000 years, as determined entirely by skulls or a greater rate of change than that between Egyptian and Algerian skulls.

But when we compare skulls and living persons we find much larger differences, which suggest that measurements on the living are not comparable with those on skulls. For instance—

¹ The word Berber should be avoided, as it is used for totally different races, the Kabyle and the Nubian, fair and black.

	Skulls.	Difference.	Living.	
Anglo-Saxon, 1,200 years old.	750	40	790	South England.
Whitechapel, 200 years old.	747	47	794	South-east England.
Modern English, all ...	770	21	791	All England.
Ancient Algerian ...	740	30	770	Living Kabyles.

Here we see that the difference of ancient and living Algeria is of the same character as that between skulls and living heads in other instances at home, even where there is no lapse of time. Hence the only difference we need consider as regards the Egyptians is that between the prehistoric Egyptian and ancient Algerian; a change of only 20, or 4 per 1,000 years, which is far within the scope of likely variation in any one race. Moreover no one has ever asserted that the two races were united by direct descent, but only that they were akin. The differences produced by amalgamation with other peoples, by the lapse of 7,000 years, by the life in a hot plain and on cold mountains, by the distance as much as from England to the Crimea;—all these will well account for a difference of 20 when the human range of racial averages is as much as 170.

On one other point of the Libyan connection a mistaken statement has been made, owing to trusting entirely to a modern transliteration of Egyptian. The royal bee in Egyptian had the phonetic value written with the leg *b*, the reed which the Greeks transliterated *α*, as in *Amen* and *Anubis*, and the drill-cap *t*, reading *bat*, or *byti* as some prefer it. The resemblance of this royal title *bat* in ancient Egypt, to the Libyan *battos*, a king, as stated by Greeks, is as close as could be expected. To deny that the Greek value of the reed sign might be *α*, is impossible when we see the examples that I name above.

I fail to see that craniometry has any serious evidence to bring against the connection of the prehistoric people of Upper Egypt with those of ancient (or even modern) Algiers. It is only when ignoring all the many causes of variation that the amount of difference seems of importance. But the physiognomy gives a decisive proof of connection between prehistoric Egypt and ancient Libya, and thus anthropology fully supports the many evidences which archæology has given for a close connection between Egypt and Libya.

We now turn to the other types found on the early monuments.

2. *The plaited-beard type*.—See Figures 11, 12. This is extremely different from the prehistoric aquiline type. The characteristics are close curly hair, a plaited hanging beard, thick straight nose rounded at the end, rather thick lips, and receding chin. The examples are only on the carved slates, dating about 75 and 78 s.d.; both are conquered peoples. On one slate they are seen to be circumcised, on the other a sheath is worn with a belt, but no other clothing

appears. Occurring so early, they seem to be not far from Upper Egypt; but no such people recur on later monuments. They may then have been an invading race from a distance, which was exterminated in Egypt; or possibly they may belong to the Red Sea coast. The nearest instance of this type is that of the deity and worshipper on the relief at Ibriz.

3. *The pointed-nose type*.—See Figs. 13, 14, 15. This is a well-marked type, with a large slender nose sharply pointed, a somewhat projecting beard, and the hair tied up in a thick pigtail from the crown of the head in Figs. 13, 14, showing that the hair was long and lank. In two cases the figures wear a loin cloth, and in the other case a long spotted robe from the neck to the calf of the leg. A figure with the same peculiar robe appears as conqueror on Slate VI (*J.A.I.* xxx, Pl. D) date 78; the robe then being trimmed with an edging all round. A similarly robed figure, nearly life size, in limestone, was found at Hierakonpolis (not yet published). The huts of these people are shown on an ivory slip (*Royal Tombs*, ii, iv, 11; see p. 22) as being circular, made of reeds or stems bound together, with a dome top of interlacing palm branches (?). In no case do they appear as captives, so they must have been early united to the conquering tribe; but yet they were tributaries, Fig. 13 bearing a branch and bowing, Fig. 14 bearing a stone vase and a palm spathe (?), Fig. 15 bearing also a vase. From the substantial long robe we must suppose that they came from a colder and elevated land; the highlands of the eastern desert (Gebel Dokhan, Gebel Ataka, etc.) are the nearest such region, and the tribute of stone vases, and early union with the conquerors who came from the Red Sea, agree with this placing.

4. *The tilted-nose type*.—See Figs. 16, 17, 18, 19. The characteristics are a short thick nose, projecting and sloped upward below; the chin short and rather receding; the brow well marked. The hair is wavy (Figs. 16, 19), like the prehistoric and later Egyptians, or curly as in Figs. 17, 18. Figs. 16 and 19 wear a belt and tie in front; 17 a kilt with an animal's tail hanging behind; 18 a waist-cloth and sheath; the slain figures on the slate are shown as circumcised. The weapons used by this type are spear, bow and arrows, double axe, throw-stick, and mace; they also used the lasso (*J.A.I.* xxx, Pl. B). They carry the hawk standard and the eastern standard. The title or name of Fig. 16 appears above him as *ua she*, which may probably mean "chief of the lake," i.e., Fayum district. These people appear as conquerors at s.d. 77 and 79; but yet conquered in 79. As, however, there are some differences (especially in beard and hair) between each of the examples given, it is likely that they were a wide-spread people which were conquered in sections. I should be inclined to see in these the general type of middle Egypt at the time of the dynastic invasion.

5. *The forward-beard type*.—See Figs. 20, 21, 22. These seem different from the preceding by the horizontal base to the nose, and the very forward growth of the beard, like that on early Greek vases (*Defenneh* xxx, 1). These heads are those of the standard bearers of King Narmer (20, 21), and that of the people over which they triumph (22). There is a difference also in 20 and 22 having

moderate hair, and 21 having long hair. The dress of 20 is a loin cloth, that of 21 a belt and hanging tie; 22, being a slain figure, is stripped, but the other heads along with it wear the skin and horns of an ox. As all of these heads are very small I have drawn them larger for clearness. This type must belong to a district partly conquered and incorporated before Narmer, and partly conquered by him. The standards borne in procession are the piece of flesh (Letopolis, north of the pyramids) carried by No. 25; the jackal (Cynopolis, 100 miles above Cairo) carried by 20; and two hawk standards borne by two men of type 21. As these have conquered similar men, it suggests that they extended further on down the west of the Delta. If the standard be that of Cynopolis it might be due to a conquering settlement of these people among the type 4 which seems likely to belong to the Fayum and Middle Egypt.

6. *The straight-bridged type*.—See Figs. 23, 24, 26, 27. This is unquestionably the conquering dynastic race. Fig. 23 is a king, apparently designated by a scorpion, who came probably just before Narmer. Fig. 24 is Narmer himself: 26 is his high priest: 27 is his servant. All of these have the straight bridge to the nose, with a very slight frontal swell in Narmer, but otherwise the forehead and nose in one line. The face is orthognathous, the jaw large, lips well formed; beard slight, and the hair long and wavy ending in ringlets, but generally shaven. This type of royal race lasted to the end of the second dynasty, as the straight bridge appears on the statue of King Khasekhem, of which the nose and chin are unfortunately lost. The dress was the loin cloth, with a tail of an animal hanging behind, for the king; a girdle with long ends for the servant; and a plain loin cloth (of the form usual in historic Egypt) for the common people, *e.g.*, the servants on Fig. 23, who are of the same type. As the conquering race appear to have started at Abydos it seems most likely that they came into Egypt from the Red Sea, along the Kosier road.

7. Lastly, at the end are some examples of the mixed race of the fourth dynasty. The head of Hesy, Fig. 28, shows much of the prehistoric type, the high domed head and long aquiline nose. The head of Khafra, Fig. 29, is of much the same type, and shows little or no trace of the early dynastic type. The head, Fig. 30, of a noble of the fourth dynasty, Sem-nefer, shows how a little of the old dynastic type remained in the mouth and chin (see Fig. 27), but the nose seems more like the Figs. 20, 21, which appear to belong to the west of the Delta. Altogether the lapse of eight or ten centuries seems to have fused the varieties, and enabled the old prehistoric type of Upper Egypt to reassert itself.

These notes will serve to show how many different strains and mixtures have to be dealt with, and how needful it is to know more of the locality and age of each type from further examples.

The table opposite shows the principal results.

Type.	Region.	Head.	Nose.	Chin.	Beard.	Hair.	Dress.	Subject.	Ruling.
Aquiline ...	Upper Egypt	High dome ...	Aquiline ...	Good	Pointed ...	Wavy ...	—	S.D. —	S.D. 30—75
Plaited-beard ...	Red Sea ?	Short dome ...	Thick and straight.	Varying ...	Plaited, hanging.	Close, curly ...	Sheath ...	75	—
Pointed-nose ...	East ? high-lands.	Medium ...	Slender, pointed.	Good	Long ...	Lank, pig-tail	Loin cloth, long robe.	—	78
Tilted-nose ...	Middle Egypt ?	Low ...	Short, thick, sloping up.	Short, receding.	Narrow, short.	Wavy ...	Belt and tie, sheath, kilt.	79	77 79
Forward-beard ...	Lower Egypt ?	Low ...	Strong, sloping down.	Strong	Forward ...	Lank ...	Belt and tie, loin cloth.	79	79
Straight-bridge ...	Upper Egypt and descending.	Short dome ...	Straight with forehead.	Strong	Narrow, short.	Long, wavy, shaven.	Belt and tie, loin cloth.	—	75

NOTES ON CRANIA FROM THE NILE-WELLE WATERSHED.

BY F. C. SHRUBSALL, M.A., M.B.

SKULLS from the Zereiba country, the Upper Nile, and the dense forest between that river and the tributaries of the Congo, are very rare in English museums. Six only are in that of the Royal College of Surgeons; the cranium of a negro of the Bari tribe obtained near Ragaff; two skulls of members of the Monbottu (Mangbattu) nation, and three of Azandeh people of the Niam-Niam country.

The chief accounts we possess of the natives of this district are found in Schweinfurth's *Heart of Africa* and in Junker's *Travels*. Schweinfurth describes the Monbottu as being of a lighter tint than any other people of Central Africa. Compared with the Azandeh they have less fulness of muscle, without however any appearance of debility, a better developed beard, and much the same growth of hair. He also says: "The physiognomical form of the skull of the Monbottu in many ways recalls the type of the Semitic tribes, and they differ from the ordinary run of negroes in the greater length and curve of the nose. All these characteristics betoken an affinity with the Fulbe, and as such the Monbottu may probably be included among the 'Pyrrhi Æthiopes' of Ptolemy."

Materials for a detailed comparison of the crania of these groups are at present lacking, but the specimens in the College of Surgeons Museum show very close resemblances between the Monbuttu and the more southern Bantu peoples. During the ten years which elapsed between the visits of Schweinfurth and Junker the Monbottu nation seen by the former had been practically erased by the incursions of Arab slave dealers from the Egyptian Sudan.

The Azandeh nation form a part of the negro family on the Nile-Congo watershed. Leo Reinisch connects their language rather with the Bantu than the Sudanese group. The term Niam-Niam, which means cannibal, seems to be somewhat indiscriminately applied to these tribes by their northern neighbours. Subjoined are detailed notes on these skulls, and brief comparisons with those of allied races. The cranial capacity of these skulls ascertained by Broca's method shows them to be of medium size, the Azandeh crania being more capacious than those of the Monbottu, and the one female cranium much smaller than either of the four males. The Bari skull was too damaged to allow of measurements being taken.

Tribe.	Catalogue number.	Sex.	Capacity in c.c.
Monbottu—			
Mangheri	1257B	♂	1320
Akossi	1257C	♂	1390
Azandeh	1257D	♂	1485
	1257E	♂	1445
	1257F	♀	1225

With these we may compare the following average capacities of male skulls:—

Masai (Virchow)	1350
Kaffirs	1540
Abantu of the Central Lake district ...	1430
Ashanti	1340
Dahoman (Virchow)	1400
Arabs	1480

The crania of the Nilotic negroes described in this note are of good dimensions, the greatest transverse diameter being bi-parietal. Viewed in norma verticalis they must be included in the ellipsoidal group of Sergi. Relatively the Monbottu skulls are broader than those of the Azandeh, the former being mesaticephalic, and the latter very dolichocephalic. The small number under consideration renders any attempt at an average impossible, but it might be noted that while the former have a higher, the latter have a lower cephalic index than the average of any Abantu skulls I have measured.¹

Virchow tabulates the distribution of the cephalic indices of skulls from this part of Africa which he has examined, as follows:—

	Masai.	Dwarfs.	Wanyamwesi.	Abantu.
Hyperdolichocephalic... ..	7	—	—	17
Dolichocephalic	6	3	4	73
Mesocephalic	3	4	4	30
Brachycephalic	—	—	—	1

To Virchow's table I add a corresponding column derived from all the Abantu crania I have had any opportunity of studying, so that, if the skulls in the College

¹ See table, *Journ. Anthropol. Inst.*, vol. xxviii, p. 91.

of Surgeons collection may be regarded as typical, the Azandeh in this respect would seem more closely allied to the Masai than to their Abantu neighbours; whereas the Monbottu exhibit the reverse characters. This suggestion receives some confirmation from the general appearance of the crania.¹

The altitudinal and breadth-height indices point in the same direction, but reveal no features of special interest. The parietal eminences are not prominent, but the usual flattening of the vertex between them is to be observed.

The sagittal curve slopes gradually and uniformly back over a fairly full forehead to reach its highest point at the bregma, behind which it runs horizontally for a short distance, and then bends round, almost as the segment of a circle, to the hinder border of the foramen magnum. In the Azandeh skulls there is a slight occipital fulness not seen in the Monbottu.

The glabella and superciliary ridges are conspicuously absent in the Monbottu and Bari crania, and are only slight in the Azandeh. The temporal crest is well marked, and its double nature is very distinct. The zygomatic processes are strong, well arched, so that the crania are phænozygous, and terminate in a distinct supra-mastoid ridge which runs up on to the posterior inferior angle of the parietal bone. The temporal squama is flattened and relatively small, the pterion is of the normal H form, and in the female skull there is a slight degree of steno-crotaphy. As is commonly the case in African negro skulls, the conceptaculæ cerebelli are full and prominent, and the mastoid processes small though rough.

Viewed from behind, the crania are pentagonal in outline with rounded angles. All the sutures are simple and wormian bones the exception. The face is square and massive with projecting maxilla and mandible; the cheek bones are very solid and prominent. The facial indices of all the skulls, except the female Azandeh, fall in the leptoprosopic division of Kollmann, while the flatness of the upper face renders them platyopic.

The orbits are square with ill-defined rounded margins; those of the Monbottu are megaseme, of the Azandeh and Bari mesoseme; but if the German classification be adopted in all cases they would be hypsikonche. In this character they agree more with the Masai, the natives of the lake district, and the negroes of the Western Sudan, than with the southern Abantu. The nose is broad and flat with a small spine and ill-defined lower border to the apertura pyriformis. The nasal bones themselves have a distinct *retroussé* curve as seen in profile. The nasal index indicates a somewhat greater degree of platyrhiny than is usual among either the Masai or the Abantu, agreeing with the average for the Ashanti and other tribes of the western littoral.

The Azandeh and Bari somewhat unexpectedly present a lower index than the Monbottu, but in view of the paucity of material no conclusion can be drawn from this fact. The palate is parabolic or hypsiloid, leptostaphylinic in index, while the teeth are large, strong and in a good state of preservation.

¹ Cf. *Journ. Anthropol. Inst.*, vol. xxviii, p. 35, and Plate V, Figs. 1, 2 and 3.

The lower jaws are strong with deep sigmoid notches, high alveolar arch and somewhat square chin. As might be anticipated, the alveolar arch shows a much higher degree of prognathism in the case of the Monbottu than in that of either the Azandeh or Bari. Possibly this fact, coupled with the diminished stature, smaller cranial capacity, broader skull and more megaseme orbits, might suggest some intermixture with the dwarf races of the forest zone constituting the Welle-Nile watershed.

MEASUREMENTS OF MANDIBLES IN MILLIMETRES.

Race.	MONBOTTU.		AZANDEH.			BAMBUTE.
Museum	R.C.S.	R.C.S.	R.C.S.	R.C.S.	R.C.S.	B.M.
Catalogue Number	1257B.	1257C.	1257D.	1257E.	1257F.	1/8/9/1
Sex....	♂	♂	♂	♂	♀	♂
Bi-condylar breadth	112	109	123	113	119	112
Maximum bi-gonial breadth	82	85	103	93	93	80
Symphysial height	33	39	35	34	26	32
Molar height	27	28	32	28	27	23
Bi-gonial arc	180	192	205	203	171	198
Ramus height	49	51	43	53	42	42
Ramus breadth	34	38	44	37	32	40
<i>Indices.</i>						
Collignon's	81·8	71·8	91·4	82·4	103·8	71·9
Gonio-zygomatic	63·3	63	76·3	72·7	72·1	64·0

MEASUREMENTS OF CRANIA IN MILLIMETRES.

Race.	Monbottu.		Azandeh.			Bari.	Bambute.
	Mangheri tribe.	Akossi tribe.	Niam Niam.	Niam Niam.	Niam Niam.		
Museum	R.C.S.	R.C.S.	R.C.S.	R.C.S.	R.C.S.	R.C.S.	B.M.
Catalogue Number	1257B.	1257C.	1257D.	1257E.	1257F.	1257.	1/8/9/1
Sex	♂	♂	♂	♂	♀	♂	♂
Maximum length	178	176	189	185	168	—	178
Maximum breadth	136	137	130	124	127	—	141
Basi-bregmatic height	124	134	131	138	122	—	125
Bi-maxillary breadth....	101	103	104	98	94	103	92
Bi-zygomatic breadth	129·5	135	135	128	129	130	125
Naso-alveolar height ...	65	75	68	67	55	67	67
Orbital breadth: Right orbit	37	38	37	38	38	39	40
Orbital breadth.—Left orbit	37	38	37	37	38	38	39
Orbital height.—Right orbit	35	34	33	33	33	34	33
Orbital height.—Left orbit ...	35	34	32	33	33	33	32
Bi-daeryc breadth	26	28	27	27	21	25	22
Nasal height	47	50	49	44	44	44	46
Nasal breadth....	24	28	29	23	26	26	27
Internal bi-orbital breadth	98	101	99	100	95	99	95
Basi-nasal length	95	99	104·5	101	90	—	94

Race.	Monbottu.		Azandeh.			Bari.	Bambute.
	Mangheri tribe.	Akossi tribe.	Niam Niam.	Niam Niam.	Niam Niam.		
Basi-alveolar length	103	105	104	104	91	—	101
Internal palatal length	51	56	55	56	49	47	54
Internal palatal breadth	38	41	37	36	38	39	31
Dental length	45	43	42	44	40	42	42
Naso-malar curve	103	108	108	106	100	106	106
Frontal curve	128	115	132	126	129	134	125
Parietal curve	112	130	114	136	119	135	115
Occipital curve	107	113	129	—	108	—	110
Total sagittal curve	347	358	375	—	356	—	350
Total horizontal curve	495	500	520	512	477	—	505
Total coronal bi-auricular curve.	292	305	305	300	290	321	286
<i>Indices.</i>							
Length-breadth	76·4	77·8	68·8	67	75·6	—	79·2
Length-height	69·7	76·1	69·3	74·6	72·6	—	70·2
Breadth-height	91·2	97·8	100·8	111·3	96·1	—	88·7
Maxillary—facial	64·4	72·8	65·4	68·4	58·5	65	72·8
Upper facial (Kollmann)	50·2	55·5	50·4	52·3	42·6	51·5	53·6
Orbital.—Right orbit	94·6	89·5	89·2	86·8	86·8	87·2	82·5
Orbital.—Left orbit	94·6	89·5	86·5	89·2	86·8	86·8	82·0
Nasal	51·1	56	59·2	52·3	59·1	59·1	58·7
Alveolar	108·4	106·1	99·5	103	101·1	—	107·4
Palatal (Virchow) Staphylinic	74·5	73·2	67·3	64·3	77·6	83	57·4
Dental	47·4	43·4	40·2	41·6	44·4	—	44·7
Naso-malar	105·1	106·9	109·1	106	105·3	107·1	111·6
Relation of Curves:—							
Frontal-total sagittal	36·9	32·1	35·2	—	36·2	—	38·7
Parietal-total sagittal	32·3	36·3	30·4	—	33·4	—	32·9
Occipital-total sagittal	30·8	31·6	34·4	—	30·3	—	31·4
Cranial capacity in c.c.	1320	1390	1485	1445	1225	—	—

Since writing the above I have been able to examine the skull of a Bambute pigmy from the Congo forest on the frontier of Uganda, sent to the British Museum by Sir H. H. Johnston. I have appended its measurements to the table for the sake of comparison. The chief features to note are the increased cephalic index, microseme orbits, long very narrow palate, broad nose and small mastoid processes, in all of which respects it agrees with the Akka skulls sent to the museum by Emin Pasha from the adjacent territory and described by the late Professor Flower. *Journ. Anthropol. Inst.* xviii, 3-19.

MEASUREMENTS OF PAPUAN SKULLS.

BY J. GRAY, B.Sc.

[PRESENTED MAY 28TH, 1901.]

I HAD recently the opportunity of measuring a number of Papuan skulls in the collection of Mr. W. D. Webster, of Streatham. There is reason to believe that these skulls came from the Purari delta and other places on the shores of the Gulf of Papua, except the last six in Table I, which came from German New Guinea. All the skulls were carved and blackened, except those from German New Guinea.

Table I gives the maximum length and breadth, and the basi-bregmatic height of each of the 124 skulls measured. The breadth and height indices calculated from the measurements are also given in Table I.

Table II gives the frequencies of the lengths, breadths, heights, and of the breadth and height indices. From this table it may be seen that there are two modal lengths, namely, 175 and 178; also two modal breadths, 125 and 130; probably also two modal heights, 132 and 136.¹

All this appears to point to the presence of two racial elements among these skulls, but on the other hand one of the maxima may be due to the presence of a certain number of female skulls among the collection.

The range of variation of the lengths (41 mm.) is considerably greater than the range of the breadths and heights (33 and 32).

The frequency diagrams of the indices also show indications of two maxima. The modal breadth indices may be taken as 71 and 76 and the modal height indices as 76 and 72; the first index in each case being decidedly the most frequent. The range of the indices is very great; from 64 to 83 for the breadth index, and from 67 to 82 for the height index.

The frequency diagram of breadths (p. 264) shows two principal well marked groups near the middle and smaller groups at each end. With a view of ascertaining whether these groups really represent racial elements or only variations of a single race, I have calculated the average length, height and breadth of each group. The results are given in Table III. It is evident that there is no constant correlation between the breadths and the lengths and heights in the four groups. This would also point to the conclusion that there is more than one racial type among the skulls.

¹ The actual maximum points are at 135 and 137, but the average 136 is probably more correct.

TABLE I.

No.	Length.	Breadth.	Height.	B. L. index.	H. L. index.	No.	Length.	Breadth.	Height.	B. L. index.	H. L. index.
1	180	121	132	67·2	73·3	63	171	125	130	73·2	76·0
2	180	126	127	70·0	70·5	64	175	131	133	75·0	76·1
3	167	118	127	70·7	76·0	65	176	142	126	80·8	71·6
4	176	125	126	71·1	71·6	66	178	125	125	70·2	70·2
5	179	127	132	71·0	73·7	67	189	134	138	70·9	73·0
6	17	130	129	74·7	74·2	68	169	133	135	78·7	79·9
7	157	130	124	82·9	79·1	69	176	128	133	72·7	75·6
8	170	121	131	71·2	77·1	70	175	135	128	77·1	73·2
9	178	124	126	69·7	70·8	71	175	131	132	75·0	75·5
10	168	119	118	70·9	70·3	72	177	127	132	71·8	74·6
11	160	121	124	75·7	77·5	73	168	128	133	76·2	79·2
12	173	123	129	71·1	74·6	74	169	131	130	77·5	76·9
13	189	144	141	76·7	74·6	75	188	129	134	78·7	71·3
14	177	133	132	75·1	74·6	76	175	120	136	68·6	77·8
15	189	126	136	66·7	72·0	77	191	131	130	68·7	68·1
16	165	136	128	82·4	77·6	78	179	134	127	74·9	71·0
17	180	132	135	73·3	75·0	79	186	124	137	66·7	73·7
18	179	130	125	72·6	70·0	80	167	121	125	72·6	74·9
19	167	131	127	78·5	76·0	81	168	129	132	76·8	78·6
20	185	132	132	71·5	71·5	82	168	132	128	78·6	76·2
21	157	121	118	77·1	75·3	83	176	126	136	71·6	77·3
22	187	125	141	66·8	75·5	84	185	130	136	70·3	73·6
23	183	133	129	71·9	70·5	85	195	131	137	67·2	70·3
24	162	131	129	80·9	79·6	86	186	132	133	71·0	71·5
25	182	130	134	71·5	73·6	87	167	122	128	73·1	76·7
26	184	132	130	71·7	70·6	88	181	128	131	70·8	72·4
27	174	129	131	74·2	75·3	89	175	123	126	70·3	72·0
28	161	131	137	81·4	85·0	90	194	130	134	67·0	69·1
29	178	121	127	68·0	71·4	91	162	133	131	82·1	80·9
30	174	125	135	71·9	77·6	92	177	137	135	77·4	76·3
31	186	139	141	74·7	75·8	93	167	134	125	80·2	74·9
32	185	120	135	64·9	73·0	94	169	129	138	71·7	81·7
33	189	131	137	69·3	72·5	95	181	123	137	68·0	75·8
34	171	123	130	72·0	76·0	96	184	129	130	70·2	70·6
35	196	129	130	65·8	66·4	97	185	129	138	69·8	74·6
36	177	128	137	72·4	77·4	98	190	139	137	73·2	72·2
37	174	129	129	74·2	74·2	99	182	143	132	78·5	72·5
38	181	120	132	66·4	73·0	100	175	134	132	76·6	75·5
39	190	125	133	65·8	70·0	101	188	132	137	70·3	72·9
40	180	124	132	69·0	73·3	102	180	125	137	69·5	76·2
41	169	135	136	79·9	80·5	103	180	125	123	69·5	68·3
42	173	125	138	72·3	79·9	104	170	126	127	74·2	74·8
43	177	121	135	68·4	76·3	105	184	143	149	77·7	81·0
44	178	120	131	67·5	73·7	106	180	122	129	67·8	71·7
45	188	136	135	72·4	71·9	107	170	129	135	76·0	79·5
46	173	130	131	75·3	75·8	108	163	129	130	79·2	79·8
47	184	119	126	64·7	68·5	109	181	123	134	68·0	74·1
48	178	125	125	70·2	70·2	110	177	125	133	70·7	75·1
49	177	122	135	69·0	76·3	111	168	130	133	77·4	79·2
50	175	130	131	74·3	75·0	112	171	122	130	71·4	76·0
51	173	123	125	71·1	72·3	113	173	122	126	70·6	72·9
52	197	129	134	65·5	68·0	114	174	123	131	70·7	75·3
53	162	133	131	82·1	80·9	115	176	140	140	79·6	79·6
54	184	126	133	68·5	72·4	116	179	122	133	68·2	74·3
55	183	134	144	73·6	78·7	117	175	112	123	64·0	70·3
56	191	130	135	68·1	70·7	118	178	133	132	74·8	74·2
57	167	117	119	70·1	71·3	119	179	128	137	71·5	76·5
58	183	131	131	71·6	71·6	120	185	135	143	73·0	77·4
59	170	125	134	73·5	78·8	121	178	134	135	75·4	76·0
60	181	137	129	75·8	71·4	122	174	130	133	74·7	76·5
61	160	125	129	78·1	80·7	123	173	120	128	69·4	74·0
62	168	130	129	77·4	76·8	124	178	130	138	73·1	77·6

TABLE II.

Lengths.	Frequency.	Breadths.	Frequency.	Heights.	Frequency.	Indices.	Frequency.	
							$\frac{B.}{L.}$	$\frac{H.}{L.}$
157	2	112	1	118	2	{ 63.5 64.5 65.5 66.5 67.5	1	
160	2	117	1	119	1		2	
161	1	118	1	123	2		4	1
162	3	119	2	124	2		6	3
163	1	120	5	125	6		8	2
165	1	121	7	126	6	69.5	6	8
167	6	122	6	127	6	70.5	13	11
168	6	123	7	128	5	71.5	15	13
169	4	124	13	129	9	72.5	13	9
170	4	125	3	130	9	73.5	10	11
171	3	126	5	131	10	74.5	5	15
173	6	127	2	132	12	75.5	10	18
174	6	128	15	133	10	76.5	4	10
175	8	129	11	134	6	77.5	8	4
176	5	130	13	135	11	78.5	3	7
177	7	131	0	136	5	79.5	6	5
178	8	132	6	137	10	80.5	4	1
179	5	133	6	138	5	81.5	3	
180	7	134	6	140	1	82.5	2	
181	5	135	3	141	3	83.5	1	
182	2	136	2	143	1	84.5		1
183	3	137	2	144	1	85.5		
184	5	139	2	149	1			
185	5	140	1					
186	3	142	1					
187	1	143	2					
188	3	144	1					
189	4							
190	2							
191	2							
194	1							
195	1							
196	1							
197	1							

Average length, 177 ; average breadth, 128 ; average height, 132.

TABLE III.

Groups of breadths.	Number of persons.	Lengths.	Heights.	Breadths.
General averages ...	124	177	132	128
Group I (112-123) ...	29	174	129	121
„ II (123-127) ...	23	177	131	125
„ III (127-132) ...	46	178	132	130
„ IV (132-144) ...	26	178	134	136

TABLE IV.

This diagram represents the correlations of the average lengths, heights and breadths of the four groups in Table III.

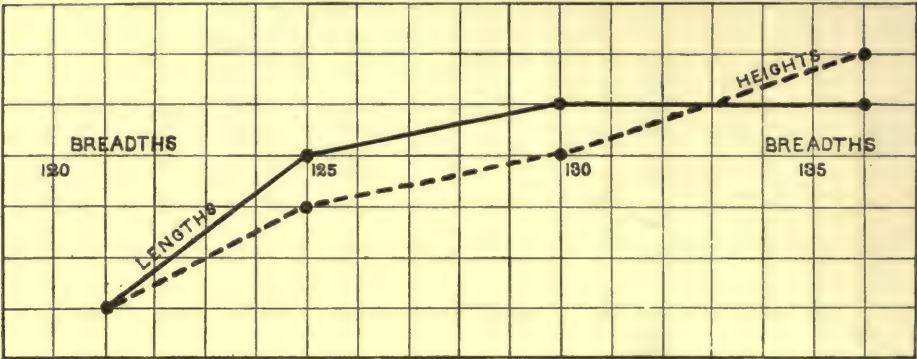
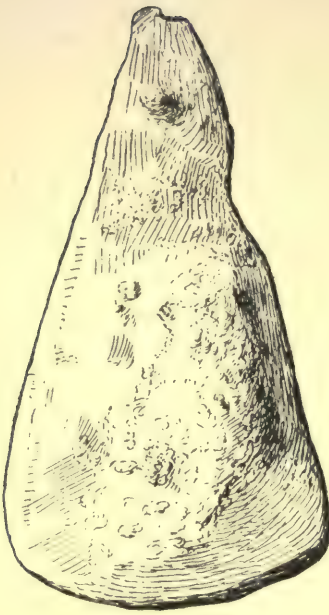
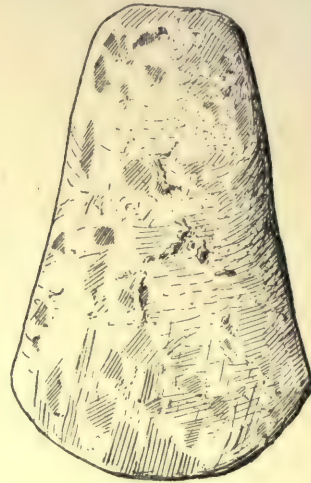


TABLE V.

No.	Height Breadth index.	No.	Height Breadth index.	No.	Height Breadth index.	No.	Height Breadth index.	No.	Height Breadth index.	No.	Height Breadth index.
1	109.0	22	112.7	43	111.6	64	101.6	85	104.6	106	105.7
2	100.8	23	97.0	44	109.1	65	88.7	86	100.8	107	104.7
3	107.7	24	98.5	45	99.3	66	100.0	87	104.9	108	100.9
4	100.8	25	103.0	46	100.8	67	103.0	88	102.3	109	108.9
5	104.0	26	98.5	47	105.8	68	101.5	89	102.5	110	106.4
6	99.3	27	101.7	48	100.0	69	103.8	90	103.0	111	102.2
7	95.5	28	104.6	49	110.7	70	74.8	91	98.5	112	106.5
8	108.2	29	105.0	50	100.8	71	100.8	92	98.6	113	103.3
9	101.6	30	108.0	51	101.7	72	104.0	93	93.3	114	106.4
10	99.2	31	101.5	52	103.9	73	103.8	94	107.0	115	100.0
11	102.5	32	112.5	53	98.5	74	99.2	95	111.4	116	108.9
12	104.9	33	104.6	54	105.5	75	103.9	96	100.9	117	109.9
13	98.0	34	105.6	55	107.5	76	113.3	97	107.0	118	99.2
14	99.2	35	100.9	56	103.8	77	99.2	98	98.5	119	107.0
15	107.9	36	107.0	57	101.8	78	94.8	99	91.5	120	106.0
16	106.2	37	100.0	58	100.0	79	110.4	100	98.5	121	100.7
17	102.2	38	110.0	59	107.2	80	103.3	101	103.8	122	102.2
18	96.2	39	106.4	60	106.3	81	102.4	102	109.6	123	106.6
19	103.2	40	106.5	61	103.2	82	97.0	103	98.5	124	106.2
20	100.0	41	100.8	62	99.2	83	107.9	104	100.8		
21	97.5	42	110.3	63	104.0	84	104.6	105	104.2		



1. (w. 5.)



2.* (1897, 1313.)



3. (1897, 111), CO. ANTRIM.



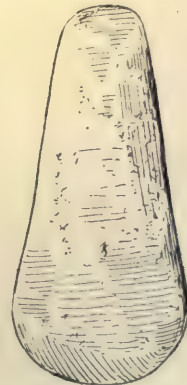
4. (w. 1.)



6. (1885, 348.)



7. (w. 1, qq.)

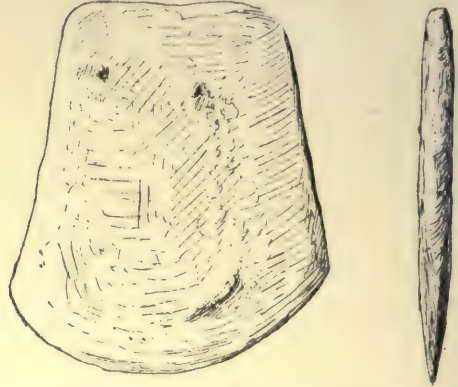


5. (w. 10, qq.)

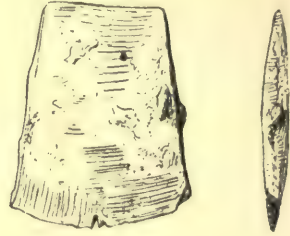




8. JERPOINT, CO. KILKENNY, *Day Collection*.



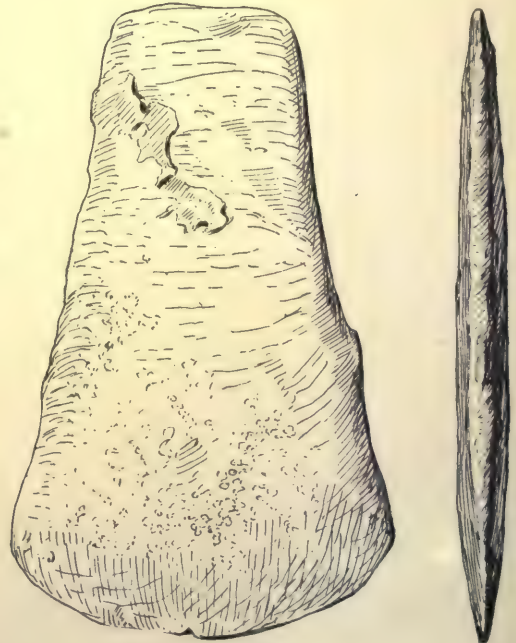
9. BALLYMENA, CO. ANTRIM, *Knowles Collection*.



10 (w. 591.)



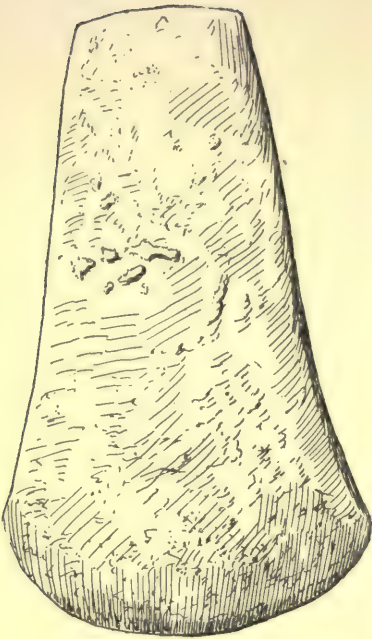
11. (w. 18.)



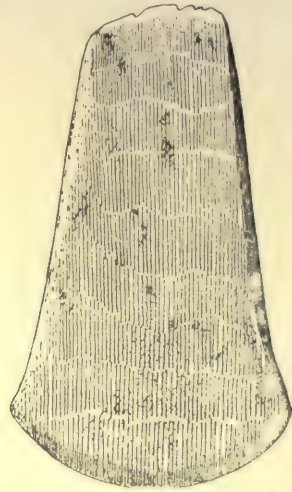
12. *Day Collection*.

IRISH COPPER CELTS.

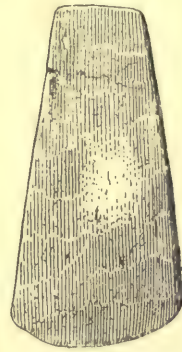
G.C. $\frac{2}{3}$ linear.



13. DUNMANWAY, CO. CORK (*Day Collection*).
Ground at edge, and sharp.



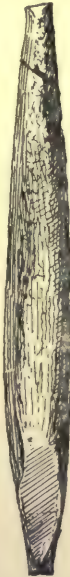
15*. (w. 3.) CO. LONDONDERRY.



15A. (w. 6 qq.)



14*. (1881, 136.) CO. CORK.



16. (w. 23.)





17. (R. 2294.)



18. (R. 2063.)



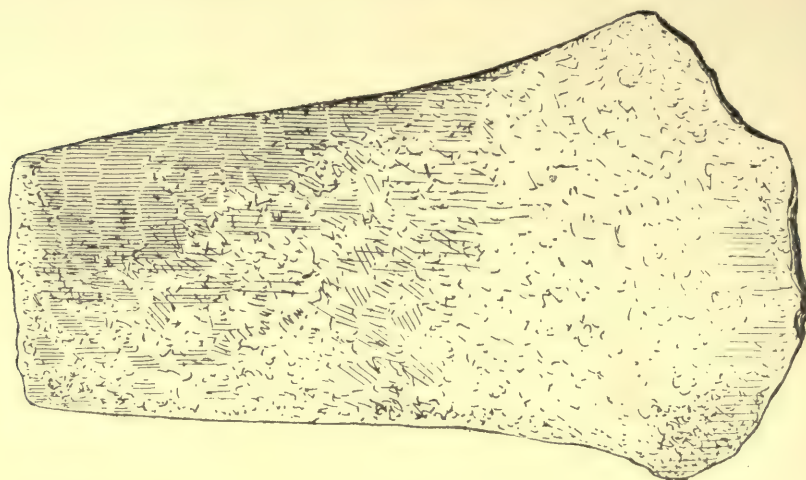
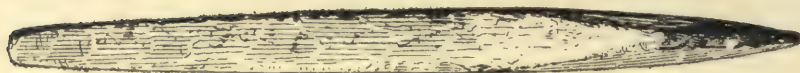
19. (1881, 137.)



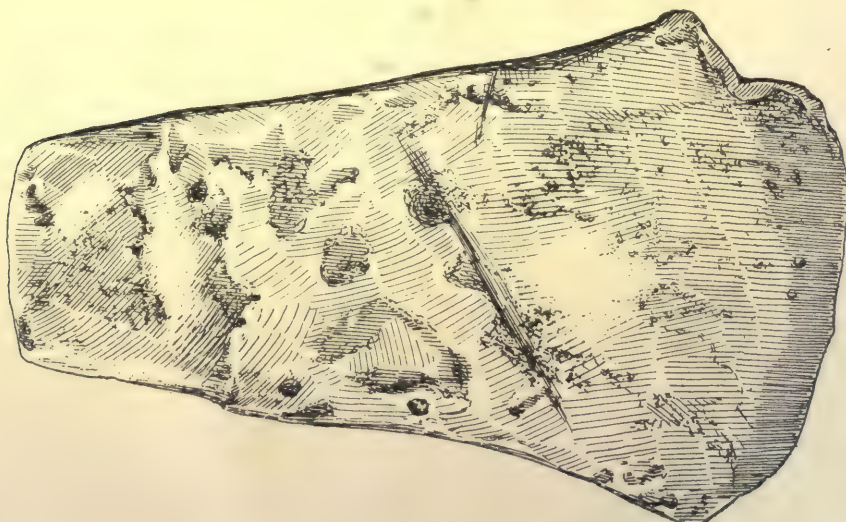
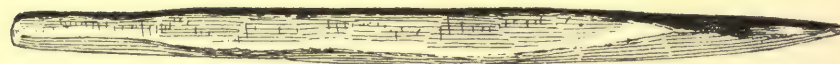
20. (w. 7, qq.)



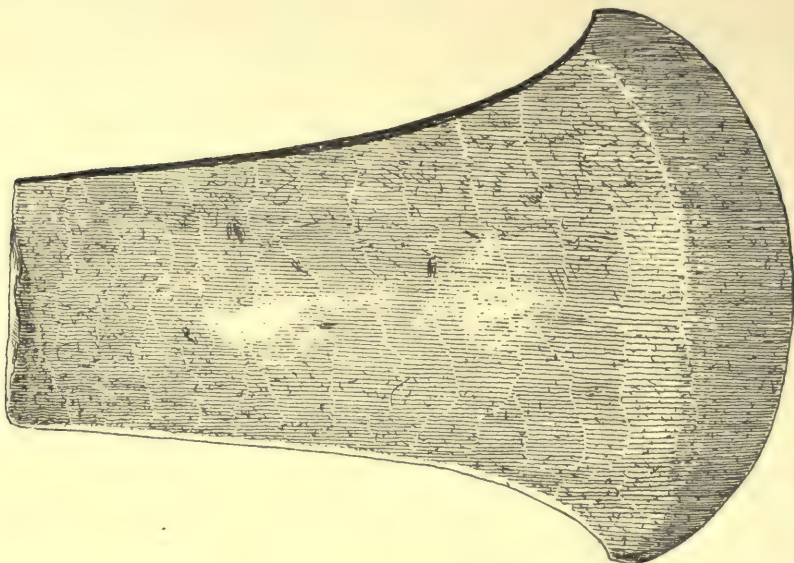
G.C. $\frac{2}{3}$ linear.



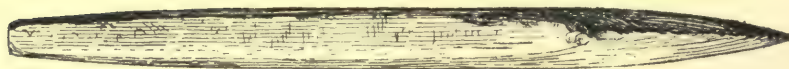
22.* (R. 1633.)



21. (1861, 133), CO. TIPPERARY.



24. (1883, 303.)



23. (w. 14.)



25. (w. 15.)



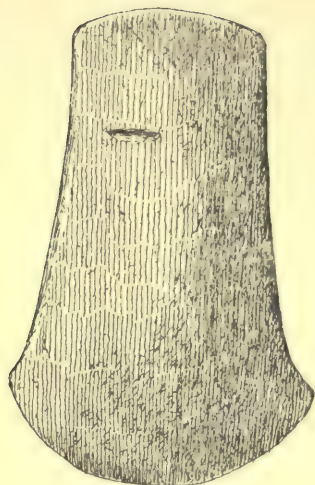
26* (w. 10 CO. WATERFORD.)



27.* (w. 17.)



28.* (w. 16.)



29. (w. 21.)



30*. (1897 112), CO TYRONE.

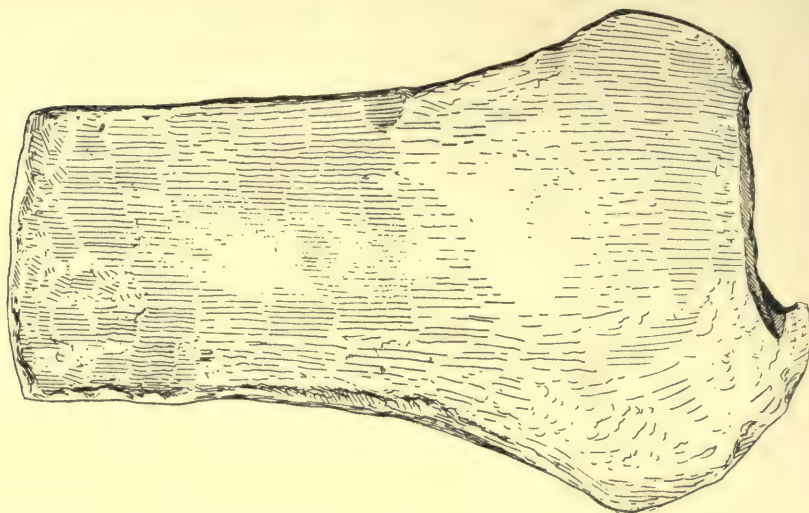
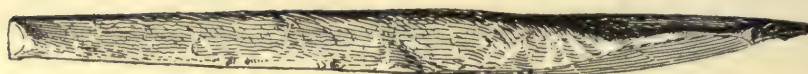


31. (w. 19.)

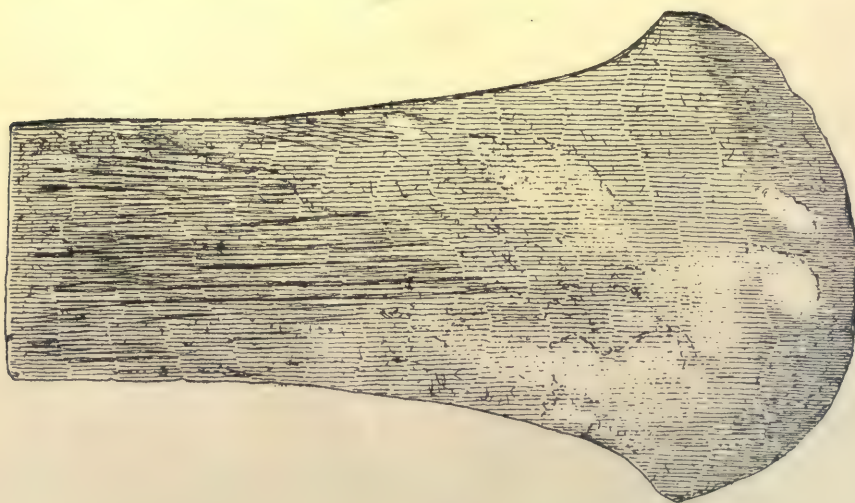
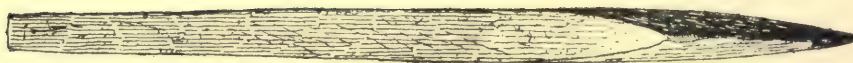


32. CO. ANTRIM, *Knowles Collection*.





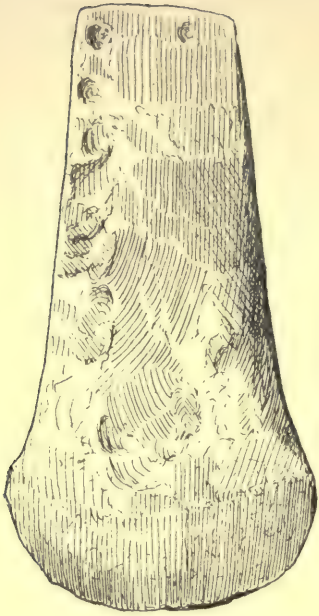
34*. (1896-7.)



33. (P. 368.)

G.C. $\frac{2}{3}$ linear.

IRISH COPPER CELTS.



35. (1897, 29.)



36 (1896, 8.)



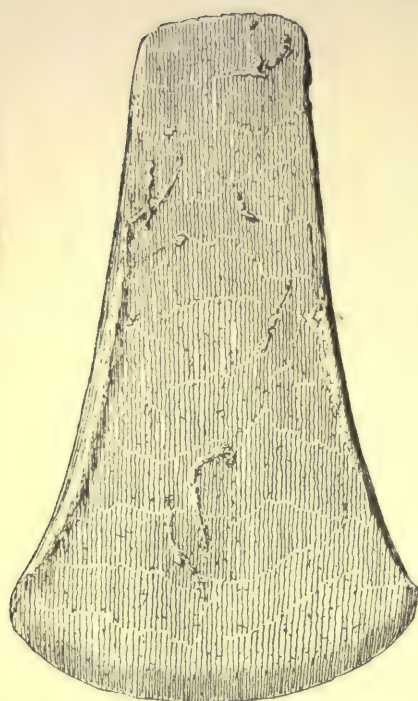
37. (1876, 26.)



38. (w. 603.)

IRISH COPPER CELTS.

G.C. $\frac{2}{3}$ linear.



40. (w. 76.)



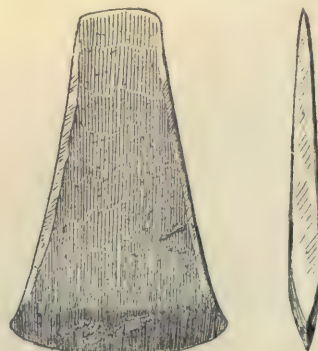
39.* (1875, 20.)



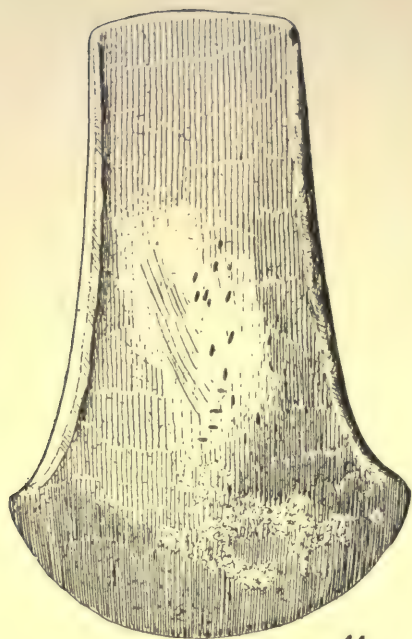
42. BAILLYBEG, CO. CORF. (*Day Collection.*)



G.C. $\frac{2}{3}$ linear. 41*. (w. 96.)



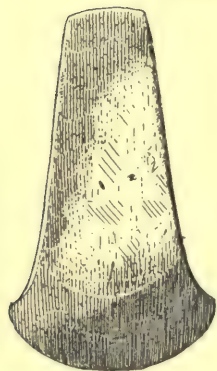
43. *Day Collection.*



44.



45 *



46



48



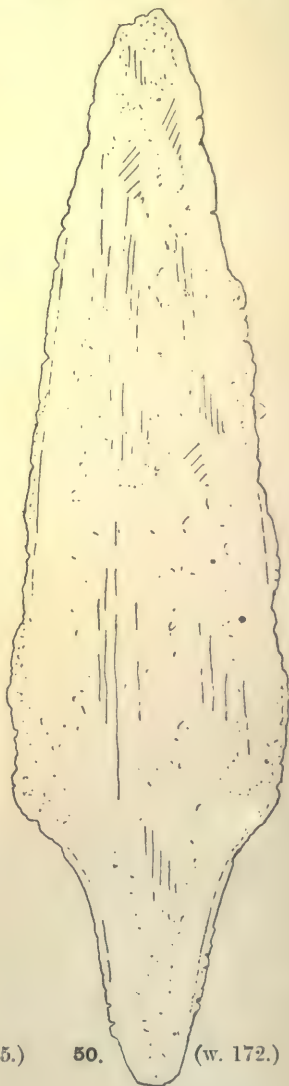
47.



49. (1900, 6.)



51. (w. 175.)



50.

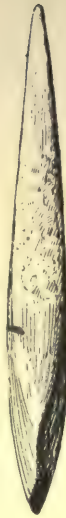
(w. 172.)

Nos 44-48 were found together in co. Galway (see p. 276).

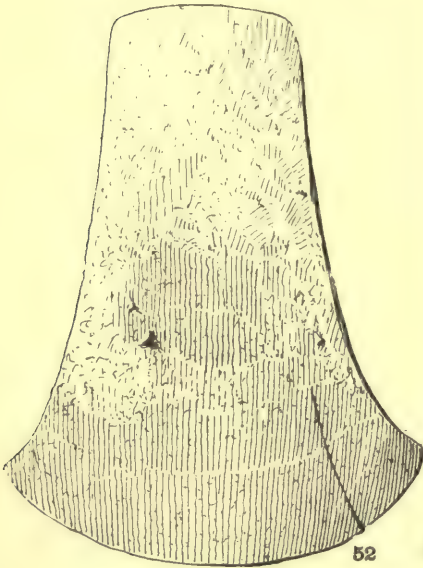
G.C. $\frac{3}{8}$ linear.



54



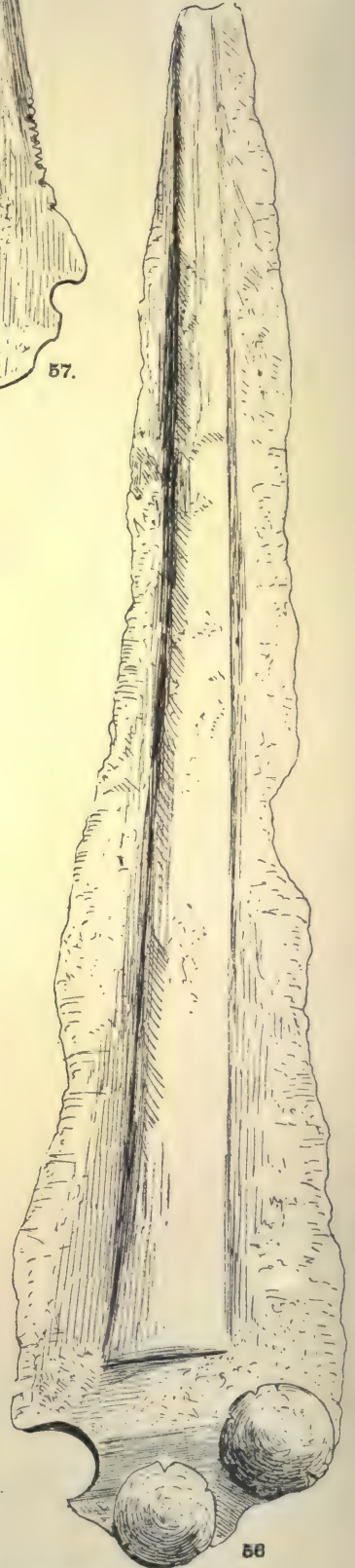
57.



52



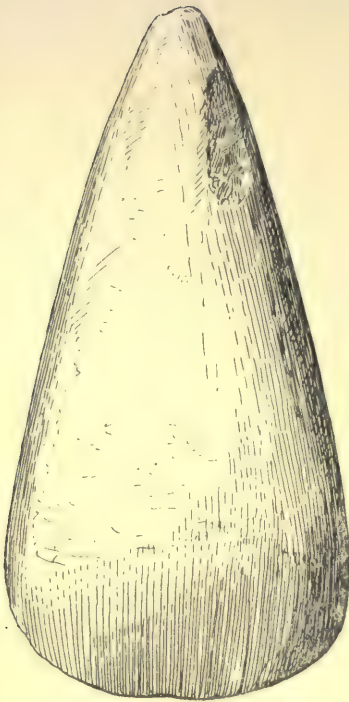
58



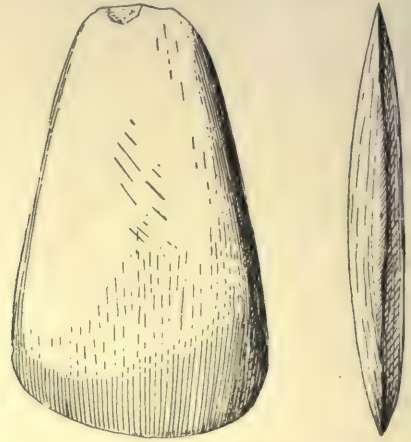
56

G.C. $\frac{3}{4}$ linear.

Nos. 54-57 found together, Birr, King's co. (*Day Collection*). See p. 276



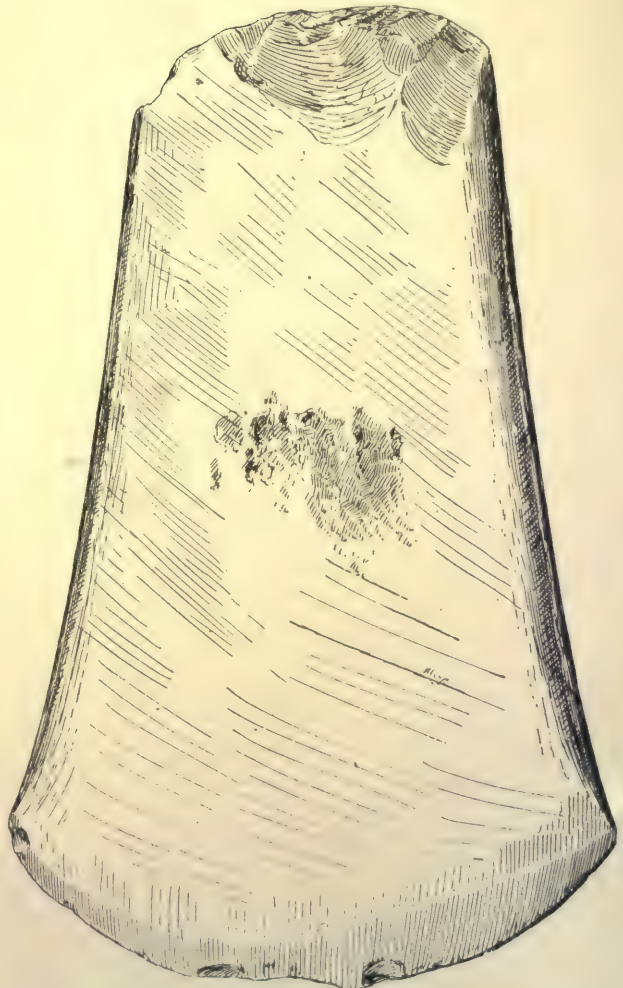
62. (R. 1852), CO. MEATH



58. (1878, 14, CO. FERMANAGH.)



61. (1899, 49), CO. LONDONDERRY.



64. (1876, 1065.)

G.C. $\frac{3}{4}$ linear.

IRISH STONE CELTS FOR COMPARISON.

IRISH COPPER CELTS.

BY GEORGE COFFEY, M.R.I.A.

[WITH PLATES XXI-XXXIV.]

THE late Sir William Wilde was, I believe, the first to make a separate classification of the copper celts found in Ireland as distinguished from those of bronze. In his *Catalogue of the Museum of the Royal Irish Academy*, he describes or mentions thirty specimens. The collection of copper celts in the Dublin Museum now numbers 84.¹ At the date of Wilde's *Catalogue*, 1861, only one specimen had been analyzed, No. 16, analyzed by J. W. Mallet about 1853,² the rest were classified by "the physical properties and ostensible colour of the metal." The appearance of the metal will seem a doubtful method of classification, but the yellow glint of bronze is very noticeable when contrasted with the red lustre of copper. It may be of interest to mention that in arranging the Dublin collection of celts, I selected those of copper in the first instance by the copper look of the metal. The subsequent analyses of eleven specimens in no case showed the selection at fault. Some of the specimens approach the type of the flat celt of bronze, and I fully expected from type considerations that in these instances a considerable percentage of tin would be found, notwithstanding their copper look. This did not prove to be the case, showing that the colour and lustre of the metal was a fairly safe guide, and that the selection had not been unconsciously directed by type.

The distribution of copper celts in Ireland is not confined to particular localities. Specimens have been found in the following counties: Donegal, Londonderry, Antrim, Tyrone, Sligo, Mayo, Galway, Fermanagh, Cavan, Louth, King's, Kilkenny, Tipperary, Limerick, Waterford, Cork, Kerry, counties which embrace the extreme north and south, and east and west of the Island, and include inland and central counties.³

¹ Mr. Day, Cork, has 24; the Museum of the Nat. Hist. and Phil. Soc., Belfast, 10; the Public Museum, Belfast (Grainger Collection), 5; Mr. Knowles, Ballymena, 6; the Murray Collection (now at Cambridge), 8. The number found in Ireland up to the present is probably, therefore, not short of 150.

² *Trans. R.I.A.*, vol. xxii, p. 325.

³ Dublin Collection—Donegal, 1; Londonderry, 1; Antrim, 1; Tyrone, 1; Mayo, 1; Galway, 4; Cavan, 2; Louth, 1; Tipperary, 1; Waterford, 1; Cork, 1.

Day Collection (Cork)—Fermanagh, 1; Kilkenny, 1; King's, 5; Limerick, 2; Cork, 4; Kerry, 3.

Knowles Collection (Ballymena)—Antrim, 3.

Evans's "Bronze Implements"—Fermanagh, 1; Cork, 1.

Sir John Leslie (Glaslough, co. Armagh)—Sligo, 2.

Before proceeding to the description of types, it will be convenient to discuss the analyses.

In 1899 Mr. J. Holms Pollok, B.Sc., Assistant Chemist, Royal College of Science, Ireland, kindly analyzed eight specimens for me, the results were communicated to the British Association, at the Dover meeting in that year.¹ Mr. Pollok unfortunately did not separate the tin and antimony. When I subsequently drew his attention to this, it was found that the residues containing the tin and antimony had been thrown together, so that it was not possible to determine the tin and antimony separately for each specimen without fresh analyses. It was thought preferable to analyze three additional specimens, selected from the beginning, middle, and end of the type series, as giving as well as the separate determination of the tin and antimony in these specimens, a larger range of analyses for comparison. Two of the specimens were analyzed by Mr. Pollok, the third by Mr. D. S. Jardin, A.R.C.S.I.

In addition to the eleven specimens mentioned and that analyzed by Mallet, a flat copper celt from Ireland, in the British Museum, has been analyzed by Mr. W. Gowland, F.S.A., F.S.C. In all therefore, thirteen specimens have been analyzed. The analyses are set out in the following table—the Museum reference is given, and the locality, when known. (See p. 267.)²

Making the maximum assumption that the determinations returned by Mr. Pollok as "Tin and Antimony" are wholly tin, it will be seen that in ten specimens out of the thirteen the percentage of tin does not exceed 0·51. In seven specimens it does not exceed 0·1 per cent. In one specimen only (W. 16, Mallet) does it exceed (by a small fraction) 1 per cent.

The analyses, as will be seen from the table, agree substantially among themselves and with those of copper celts from other parts of Europe.³

The presence of a small percentage of tin in these celts, as also frequently found in examples from other parts of Europe, raises the question whether the tin is to be regarded as intentionally added or as derived from the copper ore? In other words, whether such celts are to be classed as copper or poor bronze? A good deal of doubt still exists among archæologists on this point.

¹ *Proceedings of the British Association*, 1899 (Dover), p. 872-3.

² With the exception of the specimens analyzed by Mallet and Gowland (sulphur, nil and trace), the sulphur has not been estimated. It has been supposed that the presence of sulphur indicated that the copper had been obtained from sulphide ores. Mr. Gowland has, however, shown that this is not necessarily so; the most oxidized ores contain small proportions of iron and copper sulphides, and when reduced, the copper will contain quite as much sulphur as analyses of copper implements show. No point, therefore, turns on the sulphur. *Archæologia*, vol. lvi, p. 275.

³ See Montelius, *Die Chronologie der ältesten Bronzezeit in Nord-Deutschland*. The only specimen out of line is Fig. 26 (W 10 Waterford), which contains an unusual amount of lead (2·74). Lead is frequently associated with copper, and the copper deposits in the district from which this celt comes are penetrated in many places by lodes and strings of lead. The celt is well shaped and finished, but the metal is noticeably soft compared with the other specimens analyzed. It is, therefore, probable that the high percentage of lead is accidental.

	Copper.	Tin.	Anti- mony.	Arsenic.	Lead.	Zinc.	Nickel.	Silver.	Gold.	Iron.	Bismuth.	Total.	
Fig. 2 (1897, 1,313) ...	99.78	0.03	trace	nil	nil	—	nil	0.15	—	nil	—	99.96	Jardin.
" 14 (1881, 136), Cork	98.73	0.10*	—*	0.18	0.07	nil	nil	0.13	—	nil	—	99.21	Pollok.
" 15 (W. 3), Londonderry ...	98.43	trace*	—*	0.76	0.05	nil	nil	0.25	—	nil	—	99.49	"
" 22 (R. 1,633) ...	98.76	0.05	0.61	0.78	nil	—	nil	0.17	nil	nil	nil	100.37	"
" 26 (W. 10), Waterford ...	96.46	0.05*	—*	trace	2.74	nil	0.21	nil	—	0.25	—	99.71	"
" 27 (1870, 20) ...	98.24	0.83*	—*	0.13	0.12	nil	nil	0.07	—	nil	—	99.31	"
" 28 (W. 16) ...	98.74	1.09	nil	nil	nil	nil	—	0.06	trace	0.08	—	99.97	Mallet (sulphur, nil; cobalt, nil).
" 30 (1897, 112), Tyrone ...	97.25	0.51*	—*	1.56	0.17	nil	nil	0.25	—	0.10	—	99.84	Pollok.
" 34 (1896, 7) ...	97.17	0.27*	—*	1.86	0.17	nil	nil	0.11	—	nil	—	99.58	"
" 39 (1875, 20) ...	98.24	0.83*	—*	0.13	0.12	nil	nil	0.07	—	nil	—	99.39	"
" 41 (W. 96) ...	99.44	0.06	0.01	0.28	nil	—	0.12	trace	nil	0.08	nil	99.99	"
" 45 (1874, 38), Galway ...	97.68	0.79*	—*	0.76	nil	0.44	nil	0.18	—	nil	—	99.85	"
" (British Museum)	98.22	0.12	nil	1.04	trace	—	nil	0.16	—	0.17	—	99.71	Gowland (sul- phur, trace).†

* Tin and antimony.

† This analysis has not been published previously.

The chemists do not venture to decide the question. Dr. Gladstone, writing in this *Journal* in reference to the presence of small quantities of tin in some Egyptian implements, observes: "There can be little doubt that the admixture of tin was made for the purpose of hardening the copper, like the arsenic and antimony, and small as it is would have an appreciable effect. That so little was employed in these very early days was probably due to its costliness. It is possible also that it existed originally in small quantities in some copper ores; which would in consequence be much sought after as producing a good hard metal."¹

Without discussing the particular case of Egypt, it appears to me, from the analyses available, that, as regards Europe, the presence of a small percentage of tin is a more common impurity in copper ores than is generally supposed. The analyses of coarse coppers, both as regards tin and other impurities (arsenic, antimony, etc.), agree closely in many instances with the analyses of the copper celts. In the case of the coarse coppers it is known that the tin and other impurities are derived from the ore. A *prima facie* case is, therefore, I think, made out for the derivation of the tin from the ore, and I do not see that there is a sufficient reason to differentiate the tin from the other impurities in the copper celts. Arsenic and antimony are common impurities in copper ore, and the question of their intentional addition cannot arise unless the quantities are larger than may be expected from the ore. Of two explanations we should accept the simpler, and only when it has been shown that the local ores, from which it may be presumed the copper was obtained, are free from tin, does it seem allowable to argue that the tin has been added, and even then the possibility that the coppers or implements were imported has to be considered.

It has been stated that the copper ores of Europe do not contain tin, at least, those which do not come from tin districts.² What is a tin district is a question of degree. Outside Cornwall tin is found in paying quantities, or is known to have been worked in former times in the north-west of Spain, Saxony and Bohemia, near Limoges in France, and in more than one locality in Brittany. In addition to these localities it is known to occur in Silesia and at Findbo in Sweden.³ The list could be extended, we may add Wicklow in Ireland.

In reference to the presence of tin in copper ores from non-tin districts, Dr. W. K. Sullivan observes: "Even in districts where tin ores are not found, at least in any quantity, some tin may occur in copper ores, such as Gray Copper. According to an analysis made by Herr G. vom Rath, the Fahlerz of Kotterbach contains 0·64 to 0·75 of tin."⁴

¹ *Journ. Anthropol. Inst.*, xxvi, p. 312.

² Morlot, *Mem. Soc. Antiquaires du Nord*, vol. v, p. 25.

³ I take these localities from Sullivan's chapter on the "Sources and Composition of the Ancient Bronzes of Europe," in his Introduction to O'Curry's *Manners and Customs of the Ancient Irish*, p. 419.

⁴ p. 414. An analysis of fredricite, a variety of tennantite, gives tin 1·41. This mineral occurs at Falu, Sweden. Dana's *Mineralogy*, Appendix III.

As instances of tin in copper, Sullivan quotes an analysis by Genth of *refined* Norway copper containing 0·27 tin, and an analysis of Swedish *black copper*, analyzed at the Mining School of Fahlun, containing 0·07 tin.¹

The investigations of the brothers Siret have established the presence of tin to the extent of 0·4 to 0·5 per cent. in copper ore from the south-east of Spain. This is not a tin district, and, though searched for, no tin ore was found in the localities from which the copper ores were taken. This case is of the first importance, as the evidence is full and definite.

At Parazuelos, ore collected for smelting by the prehistoric inhabitants of the site was identified by analysis with the local ore, chiefly blue and green carbonate of copper. Analyses of the ore and slag left by the ancient smelters gave the following results:—

	Ore.	Slag.
Copper (CuO)	25·93	15·32
Tin (SnO)	0·10	0·06
Lead (PbO)... ..	0·60	1·84
Arsenic (As ₂ O ₃)	1·86	0·25
Antimony (Sb ₂ O ₃)	0·62	0·20
Gold	trace	—
Silver	trace	trace
Sulphur	trace	0·64
Iron (Fe ₂ O ₃)	39·56	56·73
Nickel (NiO)	0·40	0·61
Non-metallic elements (details, see Sirets)	31·43	24·35
	100·00	100·00

At another station, Campos, the ore and slag gave—

	Ore.	Slag.
Copper (CuO)	55·58	30·56
Tin (SnO)	0·29	0·28
Lead (PbO)... ..	trace	trace

¹ These analyses are also set out in Percy's *Metallurgy*, and other works on metallurgy.

Isolating the copper and tin, the figures correspond to—

—	PARAZUELOS.		CAMPOS.	
	Ore.	Slag.	Ore.	Slag.
Metallic copper	20·72	12·24	44·44	24·42
„ tin	0·08	0·05	0·25	0·25

These figures indicate that the process of smelting was primitive and imperfect. Allowing 10 per cent. for volatilization of other substances in the ore, the Sirets estimate, as the figures show, that the prehistoric smelters were only able to extract about 52 per cent. of the metal from the ore.

The figures further show that at Parazuelos these metals form an alloy in the ore containing 0·38 tin, and in the slag 0·41 tin. It follows from this that the copper resulting from the reduction of the ore should contain about 0·40 tin. In the same way, the ore from Campos should yield a copper containing up to 0·5 tin.¹

As regards the absence of tin ore in the district the Sirets state :—

“Du moins aujourd’hui n’en connaît-on aucun gisement. M. Moldenhauer, qui depuis de longues années a fait un nombre considérable d’analyses des roches et minerais les plus divers, nous assure que jamais il n’a rencontré un seul fragment contenant de l’étain dans des proportions tant soit peu importantes. Nous-mêmes avons parcouru le pays en tous sens, visité presque tous les gisements métallifères analysé un grand nombre de minerais, nous n’avons jamais rencontré d’étain.”²

In Cornwall, as is well known, tin occurs in considerable quantities in some of the copper ores. They are distinguished by the smelters as tinny ores. The following quotation from Napier may be recalled in this connection. Many of the distinguishing characters of an ore “depend more upon the foreign matters mixed mechanically with the copper mineral than forming a chemical constituent of it.

“The minerals composing a vein are generally of a great variety of kinds, containing often copper, tin, antimony, bismuth, iron, nickel, cobalt, arsenic, manganese, silver, etc., besides what are termed the earthy minerals or matrix, such as quartz, lime, slate, etc. In mining, the contents of the vein are taken out, so far as it contains any of the metal or metals sought after; so that what is technically termed a copper ore is often a mixture of everything that the vein contains.”³

¹ *Les Premiers Ages du Métal dans le sud-est de l’Espagne*, p. 215.

² p. 217.

³ Napier on Copper Smelting, *Phil. Mag.*, iv (1852), p. 47.

Refined English copper often contains a small percentage of tin. But it is with unrefined coppers that we should compare the celts. The following nine analyses of coarse and blistered coppers are taken from Napier.¹ Blistered copper is the purest form of copper obtained by smelting and requires no further treatment but refining. Re-fusion of coarse copper brings it to the quality of blistered copper.

—				Coarse copper.						Blistered copper.		
Copper	...	...	...	95·6	92·5	90·0	93·4	94·8	89·4	97·4	98·0	98·5
Iron	...	...	...	0·3	1·2	1·4	2·4	2·0	2·0	0·7	0·5	0·8
Sulphur	...	...	...	0·4	2·5	1·5	0·6	0·6	2·4	0·2	0·3	0·1
Silica	...	...	...	0·2	0·4	2·6	0·7	0·3	2·4	—	—	—
Tin and antimony	...	...	...	2·1	2·0	0·3	0·5	1·1	1·3	1·0	0·7	—
Lead	...	...	...	—	—	—	0·5	—	—	—	—	—
Oxygen and loss	...	...	...	1·4	1·4	4·2	2·9	1·2	2·5	0·6	0·5	0·6
				100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0

The tin and antimony are not separated in these analyses, but we may presume that an appreciable percentage of tin is present.²

In the south-east of Spain, as we have seen, the primitive smelters were not able to extract more than 52 per cent. of the copper and tin in the ore. The loss of tin in the smelting, it will be observed, was comparatively small. It appeared to me, therefore, desirable to ascertain the percentage of tin which might occur in copper ore from a rich tin district. I accordingly wrote to Messrs. Vivian, of Swansea, on the subject in October, 1899. The Messrs. Vivian most kindly offered to have their next consignment of Cornish ores tested for tin. Subsequently, under date January 17th, 1900, Mr. Odo Vivian wrote to me:—

“A short time ago we promised to let you have a few facts with regard to the contents of tin found in the Cornish ores which we used to treat.” Mr. Vivian then sets out the following table of wet assays:—

¹ Vol. v, p. 351.

² An analysis by Le Play of *black copper* smelted at Swansea gives: Copper, 86·5; iron, manganese and nickel, 3·2; tin, 0·7; arsenic, 1·8; sulphur, 6·9. Two samples of *blistered copper* also by Le Play: (1) Copper, 98·4; iron, 0·7; nickel, cobalt, manganese, 0·3; tin and arsenic, 0·4; sulphur, 0·2. (2) Copper, 97·5; iron, 0·7; nickel, cobalt, manganese, 0·9; tin and arsenic, 0·8; sulphur, 0·1. (The tin possibly includes antimony.) *Annals des Mines*, 4 Sér. XIII, pp. 453 and 486. See also Percy.

	Tons.	Copper.	Tin.
		per cent.	per cent.
1. Mixture of Levant ...	54, 55, 56, 68, 69, 70	12·3	0·94
2. " " " ...	20, 41, 42	10·4	trace
3. C. B. and Tin Croft ...	55	7·4	trace
4. Devon Great Consols ...	50	6·4	0·75
5. Dolcoath ...	6	11·9	trace

Mr. Vivian adds, from Nos. 1 and 4: "It will appear that the tin may have been left in the metal after the smelting operations, and not necessarily added in the form of alloy."

It will be observed that tin is present in all these assays. Isolating the copper and tin in Nos. 1 and 4 it will be found that the proportions of copper to tin are, in the first case, 92·76 copper to 7·24 tin, and in the second, 89·52 copper to 10·48 tin.

If we can apply to these figures the results of the analyses of ores and slag obtained by the Sirets; that is, if the presence of a large proportion of tin and the character of the ore do not seriously affect the conditions; it follows from the figures for the Cornish ores that the copper obtained by primitive methods of smelting from the ores of a rich tin district might contain a considerable proportion of tin, a proportion in fact greater than that found in the copper celts. The copper ores of Saxony and Bohemia would probably yield results comparable as regards tin to the Cornish ores.

I am not at present able to offer direct evidence as regards the presence of tin in Irish copper ores. The Irish copper mines have not been worked for some years, and I have found difficulties in prosecuting that portion of the inquiry. I hope, however, before long, to be able to complete this branch of the subject.

Copper is found in many parts of Ireland. The chief mining districts are on the south-east and south coasts, in the counties of Wicklow, Waterford, Cork and Kerry. It has also been mined on a small scale in Clare, Limerick, Galway, Leitrim, etc.

Tin has been found in considerable quantity in the Goldmines River, Ovoca, in the copper district of Wicklow. Mallet says: "The occurrence of this mineral (tin) in the sand is mentioned by Weaver in his reports on the gold stream-works, but he does not seem to have been at all aware of the large quantities in which it exists." He adds that he obtained $3\frac{1}{2}$ lbs. of tin from about 150 lbs. of sand.¹

¹ *Journ. Geol. Soc. Dublin*, vol. iv (1848-50), p. 272. W. W. Smyth, *Records of the School of Mines*, vol. i, p. 404.

This is a very high return, and if at all general would have placed the Wicklow tin in the first rank of stream-works. Tin has also been found at Dalkey in the co. Dublin, where it occurs in a lode with lead and zinc. The lode has been worked for lead and is now exhausted.¹

Nennius mentions tin at Killarney (Loch Leane), co. Kerry, and Dr. Smith, author of the *History of Kerry*, states that he picked up small specimens of ore at Killarney which contained some tin,² but this locality requires confirmation.

From what has already been established as to the occurrence of tin in copper ore, and from the fact that tin has been found in quantity in at least one locality in Ireland, it is I think more than probable that it will be found in some of the Irish copper ores. Indeed, the presumption from the general evidence appears to be so strong, that a few negative analyses would not upset it.³

Mr. Gowland has pointed out that the ores which would be first sought for copper, would be the oxidized ores—oxides and carbonates. This he infers from the fact that they are surface ores, and are more easily reduced than the sulphides. The oxidized ores require only the single operation of smelting, whereas the sulphides must be first calcined. Malachite occurs at Tinnehely in Wicklow, close to the tin, and carbonate and black oxide of copper at Barnavore. In the Upper Cronbane and the Connary mines, in the same county, the principal deposits of copper consist largely of black oxide, of which the portions near the surface chiefly consist.⁴ Large deposits of the carbonates of copper occur in the Cork and Kerry mines.⁵

TYPES.

Figs. 1 to 10 represent the rudest forms of copper celts. They closely resemble the stone celt forms found in Ireland. A few of the latter are illustrated for comparison (Figs. 59, 60, 63 (p. 274) and Plate XXXIV). Fig. 1 furnishes particular evidence on this head, the pointed butt being distinctive of a class of stone celts, an example of which is shown in Fig. 62. This is the only

¹ Kinahan, "Irish Metal Mining," *Journ. Roy. Geol. Soc. Ireland*, vol. viii, p. 11.

² *History of Kerry*, p. 125.

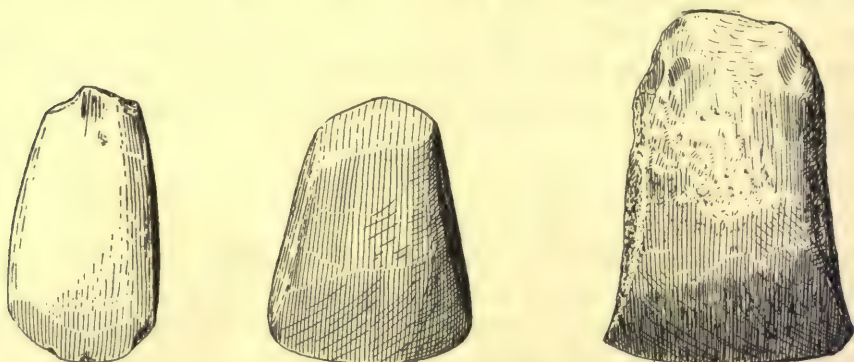
³ Gray copper ore is frequently mentioned in the *Geological Survey Memoirs*, especially for the Cork and Kerry districts, but this appears to be chiefly vitreous copper (chalcocite, Cu_2S), and not true Gray Copper. For this use of the term see Kane, *Industrial Resources of Ireland*, 2nd Edition, p. 185, and Percy, p. 310. Kane mentions a large deposit of this ore near Dungannon, co. Tyrone (a northern locality), p. 200. True Gray Copper, arsenical variety, occurs in quantity in the Ardtully lode, Kenmare Valley, co. Cork. An analysis of the ore from this lode does not contain tin, but it is not clear that it was looked for. *Journ. Geol. Soc. Dublin*, vol. vi, p. 212.

⁴ Smyth, *Records of the School of Mines*, vol. i, pp. 362, 380, 383.

⁵ *Geological Survey Memoirs*, Sheets 197 and 198, "Green carbonate of copper occurs abundantly between the dark purple slates and yellow shales of what may be called the passage beds between the old red and yellow sandstones, in a vast number of localities in the south of Ireland." Sheet 184, p. 37.

instance of a copper celt of this form which I know of from Ireland. The majority of the other examples resemble common forms of Irish celts, more or less ovate and thinned down to both ends.

It may seem doubtful whether these stone celt forms are to be regarded as ingots cast in the traditional form of the stone celt, or unfinished implements. In several instances no attempt has been made to grind them to an edge (Figs. 1, 2, 3, and 8). In other cases, however, the celt has been rubbed down more or less over the body and the edge ground for use (Figs. 4 to 7). The range in size, moreover, appears to support the intention of their being implements. Figs. 6 and 7 may be compared with the small stone celt (Fig. 59). In Figs. 11 to 13 we see the beginning of the development of the metal type, with expanded cutting edge. These three examples must, I think, be regarded as unfinished implements, the edge of Fig. 13 is ground and sharp, while the marks of casting have been left untouched over the body of the celt, so that in this respect it resembles the stone celt types. This tends to support the view that the rude celts (Figs. 1 to 8) are implements cast in the prevailing types of the stone celts, rather than ingots cast in a traditional form. In fact, the examples referred to (Figs. 11–13) show a departure in form. Fig. 10 may be compared with the small highly polished



59. (w. 199.)

60. (w. 194.)

63. (1897, 289) NORTH OF IRELAND.

STONE CELTS FROM IRELAND (cf. PLATE XXXIV) FOR COMPARISON WITH PRIMITIVE COPPER CELTS.

stone celt (Fig. 60), a type not uncommon in Ireland. Copper celts of the stone type are relatively rare. The Dublin collection contains ten of this class.

The developed metal form is seen in the examples beginning with Fig. 15. I have placed this celt at the head of the series as it retains the proportions of the stone form. It is of nearly pure copper containing only a trace of tin, and has been rubbed down to an even surface, to which may be attributed the sharp and irregular form of the butt end.

In the development of the metal form, the most distinctive feature of which is the expanded cutting edge, two types appear, diverging gradually one from the other. The thick, square, rectangular butt end is common to both, and is the normal form of butt of the developed copper celt.

Type I is relatively broad compared with the length (Figs. 16 to 28). The expansion or flare of the cutting edge in some of the larger examples is a very noticeable feature, and the concave curves of the sides are correspondingly marked, giving the celt a broad battle-axe appearance. This type would seem to lead up through examples such as Figs. 24 and 25 to the broad bronze celts with widely expanded cutting edge. (Wilde, Fig. 247).

Type II. The cutting edge is relatively narrower and the sides straighter, the form as a whole presenting a longer and more slender appearance (Figs. 29 to 42). This type appears to lead up to the common flat celt type of bronze. (Wilde, Fig. 248).

In many specimens types I and II over-lap, so that it is not possible to make a strict classification, but taking the series as a whole, the tendency to evolve the two types, as described, is, I think, apparent.

As the copper celts approach the type of the flat bronze celts, it will be noticed that there is a tendency to thin down the butt end and also to round it off, instead of the straight-across termination of the middle members of the series. This is better represented in type II than in type I.

The nearly equal thickness and flat faces of the middle members of the series also gives way to a gradual swelling of the body of the celt from both ends (in section), the thickest part of the celt at the same time moving up from the cutting edge towards the centre. These features mark the transition in the section from the stone to the metal form. In stone the thickest part of a celt is generally below the middle line, it being necessary, owing to the nature of the material, to allow as much substance as practicable at the cutting edge. In metal the thickest part of a blade is the back, corresponding, in a celt, to the middle of the implement; the thinning off from the middle line to the butt end being for the purpose of hafting, need not be taken into account. In a few instances indications of rudimentary flanges will be noticed (Figs. 40, 43, 44 and 54). These can, indeed, hardly be called flanges, being only a slight upsetting of the sides, afterwards rubbed flat. It is usually only noticeable on one face. Thus in Figs. 44 and 54 there is hardly any trace of an upset on the faces which are not shown in the figures.

Reviewing the evidence of type, it may, I think, be claimed that a development of form is found within the copper series. At one end are rude and heavy forms which look backward to the stone axe, at the other forms which approach more and more closely the early bronze celts. If this is granted, it excludes an explanation which has often been put forward to account for the copper celts, namely, that they represent merely local or temporary scarcity of tin. We are compelled by type-reasons to place them at the head of the metal series.

Collateral evidence supports this conclusion. (a) The expanded cutting edge is essentially a metal form. It has reacted on the stone celt, presumably in the period of transition between stone and metal. Figs. 63 and 64 illustrate two specimens of stone celts in the Dublin collection in which this is apparent. There are other

examples in the collection. Considering the series of stone celts apart, celts of this class must be placed typologically at the close of the series. We thus have on the one hand the evidence of the stone celts in which the form has been influenced by the metal type, and, on the other, the evidence of the copper celts in which the influence of the stone form has survived. From both sides, therefore, evidence of transition is forthcoming.

(b) The copper celts never show any trace of a stop-ridge. This feature first appears, in a rudimentary form, in the bronze celts frequently accompanied by rudimentary flanges.

(c) The copper celts are never ornamented, whereas the flat bronze celts are often richly decorated with simple punched patterns.¹

FINDS.

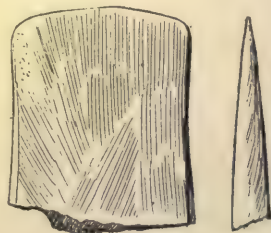
The greater number of the copper celts in the Dublin collection were acquired at a time when little attention was paid to the circumstances of the finds and association of objects, or formed part of private collections, bought from time to time, to which the same remark applies.

The following are the only finds of which I have been able to obtain information:—

- (1) Three copper celts, three copper awls, and a copper knife, found in 1874, in a bog at Knocknague, Kilbannon, co. Galway. Purchased by Royal Irish Academy from the finder, Michael Rafferty. Figs. 44–48. One of the celts (Fig. 45) has been analyzed (tin and antimony 0·79). The metal of all the implements in this find is identical in colour and surface lustre, and there can be no doubt that it is of the same quality.

- (2) Three copper celts, a fragment of a fourth (butt end), a copper halberd, and a short blade of copper of somewhat similar form, found in 1892, near Birr, King's Co. (Figs. 52–57). They were brought to a Mr. Morrison of Birr, from whom they were obtained by Mr. Robert Day of Cork, in whose collection they now are.

The finder stated that they were found under the bog in the white clay. The metal of these six objects is red copper, and appears to be of the same quality in all the specimens. None of them have been analyzed, but the following extract from Mr. Morrison's letter to Mr. Day, at the time they were discovered, may be given as an independent opinion: "They are certainly not bronze but seem



55

¹ This applies generally to copper celts. The only exceptions to the contrary, with which I am acquainted, are six copper celts found near Malmö, Sweden, the faces of which are decorated with concentric lines. These celts were portion of a large find which included bronze celts and other bronze objects. The celts in question are of advanced early bronze type, with well marked flanges (Montelius, *Chronologie der ältesten Bronzezeit*, p. 55). How

to be all copper." The fragment (Fig. 55) has been rubbed down to a sharp edge at the butt, apparently for use as a small implement.

- (3) Three copper celts (of type Figs. 23 and 24), found in 1868, when ploughing at Cullinagh, near Beaufort, Killarney, co. Kerry. Day collection, obtained through a friend from the finder.

The evidence of these finds is very consistent. They do not include any object of a late type. The celts in No. 1 are of good copper type, the awls are of an early form, and the knife I consider also to be an early type. It was evidently secured in the handle by a whipping of some sort of cord. This form of hafting may be regarded as derived from the stone age. Two other copper knives of this type have been found in Ireland (Fig. 49, found in a bog at Boho, co. Fermanagh, and Fig. 50, the locality of which is not known). The copper knife or dagger with single rivet-hole, Fig. 51 (locality not known), may perhaps be placed in the same class. These four examples are the only blades of copper, exclusive of halberds, in the Dublin collection.

The halberd in find No. 2 is admittedly an early form. It probably belongs to the close of the copper or beginning of the bronze period. Only one halberd in Dublin collection has been analyzed. It contained 2·78 per cent. of tin. Until a sufficient number of specimens have been analyzed we cannot draw a conclusion. It will be observed, however, that the celts in this find are of late copper type, compare Fig. 39 of the type series.

The remaining find calls for no special remark. But it is important in conjunction with the other finds as evidence of a number of copper implements having been found together without any association of bronze in widely separated localities.

In conclusion, reverting to the distribution of copper celts mentioned at the beginning of this paper, it will now be seen that the fact that they have been found over, we may say, the whole of Ireland, is significant.

Only three explanations are possible:—

- (1) The copper celts were made of copper for a special purpose. The development of type within the celt series negatives this explanation.
- (2) They represent local costliness or want of tin. The type series negatives this explanation also.
- (3) They represent a period in which copper was in general use throughout Ireland, before bronze was known. This explanation meets the facts, and is enforced by the finds of associated copper implements.

I should perhaps note that all the figures in the text and the plates are reduced from my own full-sized drawings to one-half natural size, or approximately $\frac{2}{3}$ linear. The specimens with asterisk have been analyzed. Museum references are given in each case. My thanks are due to Messrs. Day and Knowles for kindly placing their rich collections at my disposal.

these celts come to be of copper (tin 0·04 and 0·31) we cannot say, but they cannot be held to impair the general statement, which is absolutely true for copper celts of copper type.

NOTE A.

The high percentage of tin in some of the Cornish copper ores (no doubt also to be found in some of the copper ores of Central Europe) may have a bearing on the question of the origin of bronze. In *Prehistoric Times* (Appendix) Lord Avebury quotes the opinions of experts against the probability, if not possibility, of bronze having been produced from a mixture of copper and tin ores, or from a mixed ore. These opinions, however, are chiefly directed to the question of how the ancient bronze was produced (what we may call the normal bronze of the Bronze Age), and not to the question of its discovery, which is a different question. The opinions of experts based on the experience of modern smelting, the object of which is to obtain a clean slag, are of doubtful value on that point. As far as I can see, the question turns on whether the loss of tin in the more or less open furnace of a primitive smelter would be compensated for, and to what extent, by its retention in the metal due to the low temperature of the furnace; and by the impossibility, therefore, of extracting more than about 50 per cent. of the metal from the ore by a primitive process of smelting. We require direct experiments on this point.

NOTE B.

As far as I am aware, no copper celts have been published from England or Scotland. I am able to place the following on record. (1) A copper celt in the British Museum (copper 98·67, tin 0·05) stated (*Archæologia*, vol. vii, p. 283) to be Irish: Mr. Gowland has since ascertained that the locality is incorrect; the specimen is from Durham. (2) Cambridge Museum, two specimens in local collection, from the Fens. (3) Taunton Museum, a flat triangular copper celt from Staple Fitzpaine, Somerset; noted by Hon. John Abercromby, F.S.A.S. (4-7) National Museum, Edinburgh, four examples: Da. 1 (Wigtownshire), 14 (no locality), 43 (Colonsay), 58 (Perthshire). Also some other specimens of which I am doubtful without closer examination. None of above, with the exception of the specimen from Durham, have been analyzed, but I feel confident, from the appearance of the metal, and from the type, that they belong to the copper series. Other specimens will probably be found in local and private collections if looked for.

DISCUSSION.

Mr. MYRES referred briefly to the confirmation of Mr. Coffey's conclusions which is supplied by the series of early copper and bronze implements in the Eastern Mediterranean. He laid special emphasis on the necessity, within the latter area, of noting the occurrence of rivetless hafted knives, which he had occasionally observed in Cypriote examples, but which had too often been put aside as imperfect or corroded specimens. An analogous example of a stone celt (from Melos) which shows clear traces of the influence of metallic types, will be found in *Journ. Anthr. Inst.*, XXVII, Pl. xi, 2.

Mr. BALFOUR: Mr. Coffey's interesting paper deals in a practical and scientific manner with a very important problem in the study of the development of human

culture, and the evidence which he brings forward tends greatly to confirm the belief in the existence of a definite Copper Age in Europe, bridging over the gap separating the Neolithic and Bronze Ages. On logical grounds it has long been assumed that such an intermediate period must have existed, as through such a stage alone would there be evidence of that continuity in the development of the human arts which there is reason to believe in great measure occurred from neolithic times onward. A certain amount of direct evidence in support of this view has been steadily accumulating, and, although not as yet conclusive, must command the serious attention of archaeologists. It seems likely that we may look forward to a time in the near future when all doubt as to this continuity in the advancement from the Stone to the Metal Ages will be set at rest. Mr. Coffey, no doubt through an oversight, made no reference to a paper of the first importance which, although read before a learned society so long ago as 1869, clearly foreshadowed, in no uncertain terms, the views which Mr. Coffey has so ably expressed. I refer to the lecture delivered by General Pitt Rivers on June 18th, 1869, before the Royal United Service Institution, being the second of his classical series of lectures on "Primitive Warfare." In this General Pitt Rivers deals at length with the development of the "celts" of the Bronze Age, and the successive stages through which the highest and latest forms were gradually evolved from the primitive and simple ones. He made a strong point of the fact of the most primitive types, whose resemblance to and probable derivation from typical neolithic shapes he drew attention to, being of pure or nearly pure copper. From the specimens and information which he possessed he was able to make this clear, particularly in regard to Irish bronze "celts," but such evidence as he had from other countries supported his views. He published an ingenious and most valuable diagram-table illustrating his remarks, and I venture to think that in dealing with this subject the researches of General Pitt Rivers, eminently characteristic as they are of that brilliant investigator, should on no account be overlooked. It is greatly to his credit that the views expressed in a lecture delivered over thirty years ago should practically hold good at the present day, and are supported by the most recent investigations.

Dr. GLADSTONE expressed his admiration of the manner in which Mr. Coffey had worked out his research into the composition and probable source of these very ancient Irish celts. He has greatly strengthened our reasons for considering that the small amounts of tin which are found in ancient metallic tools in the countries of antiquity were not added intentionally, but were derived from the ores. If these very small quantities of tin, antimony or arsenic do really increase the hardness of copper, the employers of such weapons would find out where the best article came from, and thus these most valuable implements would be in the greatest demand among the ancient nations.

THE LENGUA INDIANS OF THE PARAGUAYAN CHACO.

BY SEYMOUR H. C. HAWTREY.

[PRESENTED DECEMBER 10TH, 1901. WITH PLATES XXXV-XLI.]

BEFORE proceeding to the study of the Indians of the Chaco we must consider the geographical conditions of the land in which they live.

The Grand Chaco extends from latitude 20° S. to latitude 28° S., south of the watershed between the head waters of the Paraguay River and those of the Amazon's tributaries. It extends southwards and south-westwards till it merges into the cultivated plains of the Argentine Republic; it thus embraces parts of three Republics, the Argentine, Paraguayan, and Bolivian. This country is extremely flat, and several rivers flow from the Andes mountains right across the Chaco, and empty themselves into the Paraguay River, the two most worthy of notice being the Vermejo and the Pilcomayo, which last forms the boundary between the Paraguayan and the Argentine Chaco, and is further described on p. 289.



FIG. 1. SKETCH MAP OF THE PARAGUAYAN CHACO.



A LENGUA—A COMMON TYPE.

(Note the enlarged ear-lobes and drum-like ear discs.)



LENGUA BOY. METEGYAK (*i.e.*, "BORN WHEN FATHER WAS ON A JOURNEY").

(Note the lamb's wool armlets and head ornament.)



LENGUA BOY: MANGWEAM-AI.

The tree is that which is used for making fire sticks.



LENGUA FACE PAINTING.

With the aid of a small round mirror.



A LENGUA VILLAGE.



1. LENGUA WOMEN DRESSED FOR A DANCE.



2. POTTERY-MAKING.



1. LENGUAS PLAYING THE GAME "HASTÁWA."



2. WOMEN'S DANCE AT A LENGUA FEAST.



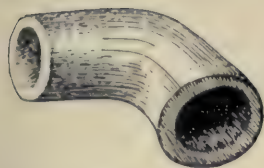
1. LENGUA BOYS WITH PELLET BOWS.



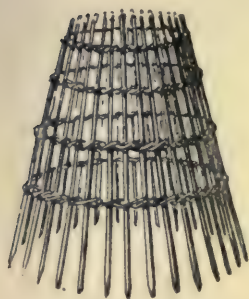
2. LENGUA BOY USING BLUNT-HEADED ARROW.



3. LENGUA INDIAN HOEING MANDIOCA.



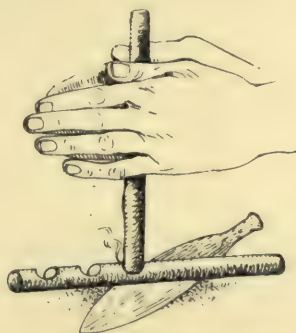
1. Clay Tobacco Pipe of primitive form ($\frac{1}{2}$).



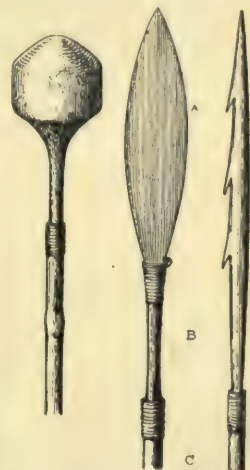
3. Fishing basket ($\frac{1}{10}$).



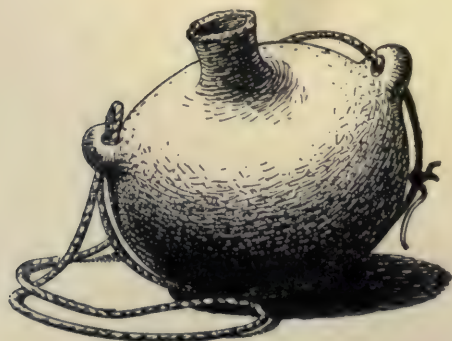
4. Doll of rags and bone ($\frac{1}{2}$).



5. Lengua method of making fire ($\frac{1}{10}$).



6. Blunt-headed arrow ($\frac{1}{5}$). 7. Iron-tipped arrow ($\frac{1}{5}$). 8. Wooden arrow ($\frac{1}{5}$).



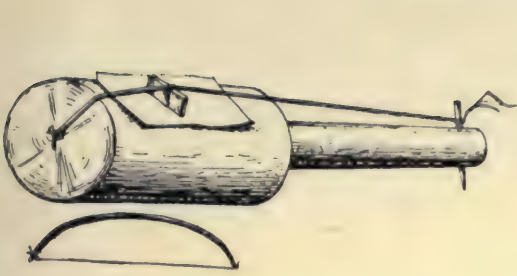
9. Clay Water Jar : no ornament ($\frac{1}{10}$).



10. Clay vessel (Tóóthli), painted ($\frac{1}{10}$).

MISCELLANEOUS OBJECTS OF LENGUA MANUFACTURE.

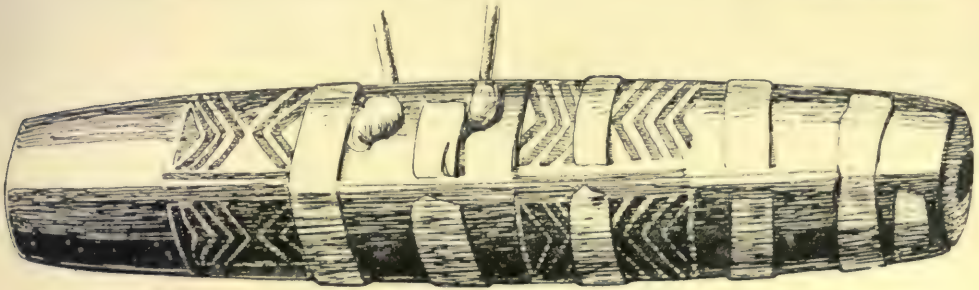
Redrawn by C. Prætorius from water-colour drawings by Miss A. E. Donkin. The originals were collected by the author, and are in the British Museum.



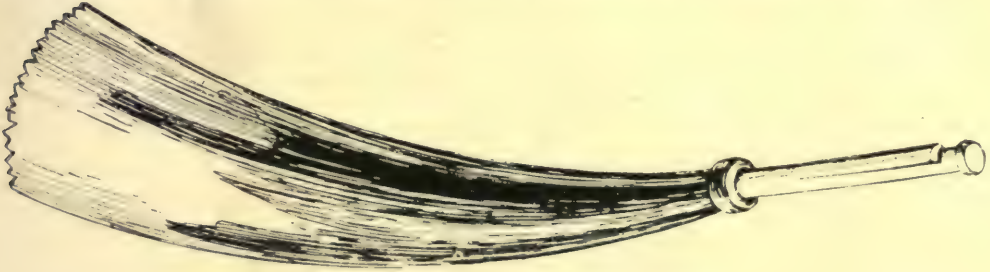
1. One-stringed fiddle: the body is hollow.



2. Wooden whistle.



3. Wooden whistle (another form) ornamented with strips of polished tin. (Tóóthli.)



4. Wind instrument of cow-horn, with reed mouthpiece.



5. String bag.

MISCELLANEOUS OBJECTS OF LENGUA MANUFACTURE.

Redrawn by C. Praetorius from water-colour drawings by Miss A. E. Donkin. The originals were collected by the author, and are in the British Museum.

It is with the district lying on the $23\frac{1}{2}$ parallel of S. latitude, between the Pilcomayo and the Paraguay River, that we have to deal. In studying native life it is often found that the country makes the man, so that it will not be amiss to glance at a few of the principal features regarding the climate and the natural products of the Chaco. The Chaco being flat, as I have stated, there is very little chance for a heavy rainfall to drain quickly away. The rivers are extremely tortuous and sluggish, though, for their volume, some of them are much longer than would have been expected. The consequence is that with a prolonged drought water is extremely scarce, while on the other hand, after a heavy rainfall, which is as common as the drought, the water lies ankle deep on the open plains. During a period of five years (1895–1900) careful notes have been kept of the temperature and rainfall, the average temperature being 75° Fahr. night and day—maximum, 110° ; minimum, 27° . The rainfall is extremely variable, the one noticeable point being that August is almost always a dry month; the rain in fact seems rather to go by cycles than by seasons, a period of three years of excessive wet having been followed by four years of moderate drought. More rain usually falls in summer than in winter.

The Indians of that part of the Chaco which is to be described are composed of three different tribes, the *Lengua*, the *Tóóthli*, and the *Suhin*. The name *Lengua* comes from the Spanish and means “a tongue,” the other two are native names given by the Lenguas to neighbouring tribes. These Lenguas lie on the western bank of the Paraguay River, from latitude $22\frac{1}{2}^{\circ}$ S. to latitude 24° S., and extend inland a distance of 150 miles. Beyond them to the west lie the *Suhin*, whose limits have yet to be determined and between these two in the south-west are the *Tóóthli*, a small tribe who present slightly different characteristics to those of their neighbours. The Lenguas are essentially a nomadic and a peaceful tribe; the *Suhin* are more agricultural, and in consequence less nomadic; while the *Tóóthli*, being somewhat pushed in the struggle for existence by a neighbouring tribe in the south, are more warlike than either, though they still depend upon agriculture and the chase for their food supply. It was amongst the Lenguas that I have lately spent a period of four years, and have had ample opportunity for studying their manners and customs. I have, however, unfortunately, made no definite observations of an anthropographical character; regarding the Indians, as I did, rather as friends and companions than with a scientific interest.

Physical Type (cf. *Anthropological Notes and Queries*, Part I).—The Lenguas do not belong to the Guarani family, who inhabit such an extensive tract of country in South America, nor to the Quichua family of Bolivia. From their language, customs, and disposition, they evidently are of the same stock as the Toba, Mataco, and kindred tribes who occupy the greater part of the Argentine territory still unsettled, and extend northward into the low-lying lands of Bolivia.

As a general rule they are of middle height, well built, with a smooth, healthy, reddish-copper brown skin (between tints 4 and 5, *N.Q.*, Pl. III) and

straight black hair, which is usually cut across the shoulders. Their teeth, of course, are remarkably sound, their hair plentiful, and not turning white till a great age, their eyes strong, their hearing reasonably acute, and their perceptions remarkably so. The facial type presents occasional similarity to the North American or even to the Mongolian type (Plate XXXV, 1).

To a newcomer all Indians appear very much alike, but on closer acquaintance a certain variety of feature will be observed, and even sections of the same tribe may be found to present some differences. Also, though a strange Indian may at first sight seem to have an ugly and forbidding face, yet on nearer acquaintance, and after a certain degree of friendship has been established, his features will often appear to be characterized by pleasantness and openness.

Clothing (*N.Q.* (Part II), Sec. i).—The natives are well clothed. The men wear blankets woven from wool by the women, and dyed by them (*N.Q.* vii, below); a variation of this is the loose sleeveless shirt, likewise made of wool. The women wear skins carefully prepared, cut and sewn by themselves into petticoats, and they are more careful than the men in the matter of keeping



Fig. 2. Lengua Indian, showing headdress, scalplock, and whistle suspended round the neck: from a water-colour drawing by Miss A. E. Donkin.

themselves covered. The men never wear skin petticoats or kilts, with the exception of a skin belt cut into strips and hanging about a foot deep. The women also use, in the cold weather, a cloak made of deer or goat skins with the hair on. Usually the natives do not wear any head covering, though, as they feel the heat in summer, they are glad to get hold of imported hats, but on special occasions the men wear a net over the head, made of red wool, and trimmed with beads, and they often wear feather head-dresses. A common head ornament is a feather of the "rhea" (*Rhea Americana*) or "South American ostrich," stuck into the scalp lock, which is formed by drawing over the forehead the hair of the centre of the top of the head, and binding it tightly round with red wool till it looks like a shaving brush (Fig. 2). They usually have their feet bare, but on long journeys they often provide themselves with sandals of hide.

Personal Ornaments (*N.Q.* ii).—At their feasts they usually dress in the height of their fashion, and put on all the ornaments they possess. Both men and women wear strings of beads; the men wear red feather head-dresses, which are occasion-

ally borrowed by the younger women. Armlets of lambs' wool are often worn by men, and anklets of twisted rhea feathers (Plate XXXIX), which, besides being ornamental, are supposed to be a safeguard against snakes, for the snake bites at the moving frill and does not touch the foot. Bracelets of woven wool are



FIG. 3. LENGUA EAR-DISC.

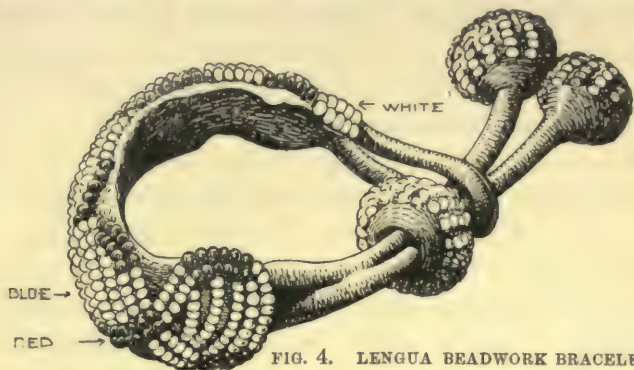


FIG. 4. LENGUA BEADWORK BRACELET.

worn as in Pl. XXXV, and are ornamented with beads (Fig. 4), and hanging beadwork is at times attached to the scalp lock, or hung round the neck. The lobes of the ear are perforated, and distended by thick discs of wood or other material, which in rare cases are as much as 3 inches in diameter. (Fig. 3.)

Woollen girdles are always in use to secure the blanket or petticoat; leather belts cut into hanging strips are also prized by the men, and a common way of fastening the blanket is with the little "aiin," or string bag, which all the men carry. This bag (Plate XLI, 5) contains all the little necessities of life, such as matches, fire-sticks (Plate XL, 5), tobacco, ear-discs (Fig. 3), bone implements, claws of animals, and so on, and finishes in two long strings, which are tied round the waist, outside the blanket.

Painting (N.Q. iii).—On grand occasions red paint is used lavishly. It is made from the pounded seeds of a shrub, and is much valued; sometimes the entire face is covered with the red paint; sometimes the paint is put on in broad angular lines. A dark blue-black paint is also used, but it is much more carefully applied, in narrow lines and patterns, while the same paint carelessly applied in broad lines indicates mourning. On one occasion, however, at a Suhin feast, two or three of the principal chiefs had their faces entirely black with charcoal for days together, and this was not intended to indicate mourning. Except in mourning, painting as a rule seems to be for the purpose of increasing the charms of the individual (cf. Plate XXXV). Black paint marks are often noticed on the chest and arms; these are not permanent, and are made roughly with the fingers. A black chequered paint pattern has been noticed on a woman's cheeks.

Tattooing (N.Q. iii) is known among the Tóóthli, and the Suhin; and rarely among the Lenguas; it is confined to the face, and is more noticeable with the women than the men. The actual process has not been observed.

Habitations (N.Q. iv).—The Tóóthli and the Suhin, on account of their more agricultural habits, are better house-builders than the Lenguas, and their villages

are composed of a cluster of separate houses. The general principle, however, of all the buildings, is to use branches of trees, stuck in the ground, bent over, and meeting at the top without any ridge-pole, and with grass thatch thrown on. Near the river the natives have built better houses for themselves, on the ridge-pole-and-rafter principle. They are usually built in a slight curve, the two ends facing north by way of protection from the cold south wind and storms. The natives cannot draw straight lines, nor can they put posts in straight.

Among the Lenguas the house (Pl. XXXVI) is open through its entire length, and usually at the sides as well; and seeing that the rain often comes through the roof, it will be easily understood that these natives are not well housed, but they endure their discomfort with the utmost philosophy, and contentedly accept whatever weather prevails. For their needs their houses are sufficient, dependent as they are upon an inferior supply of water and food, which necessitates a constant change of abode. Moreover, when one member of a family dies, the house is demolished and another one is built, often at a distance of some miles, by the survivors. One of these houses will accommodate from forty to sixty souls. No special arrangement is made for comfort, or superiority of position in the houses. Skins are always used to sit upon, with the hairy side invariably underneath, so as not to attract insects. Under the low roof of interlaced twigs are hung rhea-skin bags, or nets containing the women's wool, twine, etc., earthen pots, and other household necessities. Into the thatch are stuck the man's bows and arrows; and on the floor are the water jars (Plate XL, 9) and cooking pots, both of clay and iron (the latter, of course, imported), and rolled-up skins, rhea-feathers, and half-gourds which are used as cups and balers. Goats and sheep disport themselves around and through the houses; and lean, hungry dogs are in evidence everywhere, eagerly snatching at every bit of food which the natives are unable to eat.

Weaving (*N.Q.* vii).—This is done by all the women, and though their tools are rude, they can turn out a remarkably well-made blanket, with stripes and patterns. Of these blankets when new, the men are very proud, especially if dyed with the dark red dye (*see* below *N.Q.* xii), and it is hard to induce them to sell one of these except in exchange for a horse. The patterns are often of a diamond or triangular shape; and sometimes the triangle is worked in with small spots. The usual class of pattern may be seen in the woven belts which are about 5 feet long by 3 inches wide. In their patterns they are conservative, and not inventive enough to produce new ones. So much is this apparent that it is not unlikely that their knowledge of weaving was derived from the time of the Incas, who spread a certain degree of civilization over a large area.

The loom is formed by two upright forked posts with a pole across the top, and another tied at the bottom. As the woman sits on the ground she can just reach up to drop the ball of wool over the top pole and catch it and pass it underneath the lower one, till the warp is finished. Then by an ingenious contrivance of cotton string, crossing the whole width, and picking up each alternate strand of wool, she is able to separate them, and to pass the hank of wool,

which takes the place of the shuttle, between the warp threads. The woof thread is then pressed down into place by a kind of long wooden stiletto, smartly drawn along between the warp threads two or three times; this is done in sections of about 12 inches at a time. When finished a good blanket is usually about 7 ft. \times 6 ft.

In a neighbouring tribe I have seen a woman sitting on the warp threads to keep them tight, the blanket being about 4 inches from the ground, and stretched horizontally; with a stick of wood in use to help to separate the warp threads, and a shuttle for the wool. This was probably a Mataco woman, and the improved method may have been derived from the Argentine Chaco.

Basket-work (*N.Q.* viii). See below (*N.Q.* xxv and Plate XL, 3) for a description of the rude baskets used in catching fish.

String (*N.Q.* ix) is extensively made and used both by men and women. The fibre is procured from the "caraguata" (a species of wild pineapple) by scraping a leaf of the plant against a stick placed upright in the ground or through a fixed loop of string, with the two ends of the leaf held at an acute angle. It is worked up into string, from the size of thread to that of a half-inch rope, and is chiefly used in the manufacture of nets and string bags (Plate XLI, 5). A hank of string ready for use is often used as a belt.

With string puzzles, after the fashion of "cat's cradles," they are very clever, and can make representations, with more or less faithfulness, of most common objects, a gourd, a rhea or a star, a pumpkin, a bird, some being very complicated and requiring four hands.

Leather (*N.Q.* x) is not tanned, but is worked soft by creasing or folding the scraped skin in diagonal lines like the "crushed" leather of Western Asia, and accentuating the crease by passing the smooth lip of a large snail shell firmly along it. The skin is then rubbed on the lap with a simultaneous wringing motion. The sewing of the women's petticoats is often very fine.

Pottery (*N.Q.* xi) is not used extensively, and more attention is paid to usefulness than to ornament. Water pots (Pl. XL, 9), and cooking pots deep and rather conical in shape, for standing upright among the ashes, are made by first rolling the clay between the hands in rolls about 9 inches long, and adding on piece by piece in the requisite shape (Pl. XXXVII). When half dry the pots are scraped, and polished with the smooth rim of a shell, and then left in the sun for a day or two till quite dry, when they are baked in open fires made by piling wood around and over the pot. This method of firing is, of course, not good, and the clay is not baked evenly through. The earliest form of tobacco-pipe here was probably a rough bent cylinder of clay (Plate XL, 1). These, however, are but seldom seen now, for since the introduction of iron and steel knives, it is found more economical to make wooden pipes which will not break (Plate XL, 2). For painted pottery see *N.Q.* xxiv, below.

Dyeing (*N.Q.* xii).—The bark of various trees is used for dye, but a small bulbous root with a fast dark-red dye is very much prized, and the cochineal insect is also used,

The substances chiefly dyed are sheep's wool and cotton, which latter, like the former, is sometimes woven into blankets; the wool is dyed, after being twisted, by steeping. String also is frequently dyed with bark to be made up into net bags.

Fire (*N.Q.* xvi) is still obtained by friction; though flint and steel, and even matches, are now becoming common. The method of friction which is employed is represented in Plate XL, 5. The upright stick is twirled between the palms of the hands. To produce the desired effect firm pressure downwards is required, and quick recovery when the hands reach the bottom. Smoke comes quickly, but the spark takes a comparatively long time. When it does come, it ignites on the little heap of brown dust which is produced by the friction of the two woods, and is caught on the arrow head laid athwart beneath the horizontal fire-stick. The Lengua name of the wood for fire-sticks is *hapin*. The tree itself is shown in the background of Plate XXXV, lower, left.

Conservatism (*N.Q.* xx).—I have mentioned that these Indians are conservative; this is shown by their reluctance to adopt any new custom. When they are shown a new and better way of working, a common reply is, "It isn't better, our way is the best," or else, "That way may be good enough for you, you are accustomed to it, but our way suits us best." For instance, after we had endeavoured to teach them to shear their sheep with shears, the women still preferred to cut the wool off with a knife as required, which apparently has always been their custom.

Writing (*N.Q.* xxii).—Though there is no knowledge of writing among the Indians yet they can keep a diary, for as much as three weeks or a month, by means of a stick, about the size of a pencil, closely notched all round. Producing this from his bag, an Indian can retail the events of the past few weeks with accuracy. When on the march they are accustomed to make certain signs which their friends following may understand. Where two paths branch off, a wisp of grass laid across the one means that the party in front has gone on by the other. At an abandoned village a sign may sometimes be seen: a piece of stick or bamboo is planted in the ground and inclined in the direction which the natives have taken. In this case distance is also indicated by a slight hollow scooped out behind the stick, either long or short, and the purpose of their departure is shown by a wisp of rhea-feather, or a small gourd on the top, to show that they have gone hunting or to a feast. In cases such as these an Indian shows remarkably acute perception in reading what his friends wish to say. In hailing a friend from a distance, also, though the sounds to an onlooker may be but a confused noise, yet the Indian will understand.

They appear to have no knowledge of the *quipu* system of keeping a record of historical events by knotted cords.

Drawing, etc. (*N.Q.* xxiii).—See above (*N.Q.* ix) for the representation of living objects by means of string puzzles of the type of our "cat's cradles."

Ornament (*N.Q.* xxiv).—All their ingenuity in the decorative arts is brought to bear on their pipes, and it is rare to find two pipes identically the same (cf. Plate XL, 2). A pipe with two bowls is occasionally seen but not much used.

Freaks in the wood are often used to make an original looking pipe. For textile ornament *see* above in section on *Weaving* (*N.Q.* vii). The decorated Tóóthli pottery shown in Pl. XL, 10, is painted with bits of resinous "paolo santo," and ornamented with flat pieces of shell stuck on with wax.

Food (*N.Q.* xxv).—With regard to *food* they are dependent to a great extent upon what they can find in the open country. Deer of several varieties are abundant as also is the *rhea*. Different species of armadillo are also common, and fish, crocodiles, and otters are met with in the streams, along with *nutria* and *carpincho*. Fish are obtained generally by following the water in the swamps, where they often lie so thick in the stagnant pools that they can easily be caught by hand. Indians also make a little conical wicker basket about 2 feet high (Plate XL, 3), open at base and apex, which when placed over the fish easily enables the fisherman to catch it by putting his hand through the hole at the top. In the swamps and shallow streams "Loläch" or "mud-fish" (*Lepidosiren*) are commonly found. In the deeper streams, bow and arrow is often used, and the Tóóthli Indians, after making weirs in the stream above and below some deep hole, catch the fish by diving after them with a narrow net fixed between two long sticks, stringing the fish on to a cord round the waist when caught. Spears of pointed wire are used for eels and mud-fish.

The leguminous *algaroba* or "caroub" (*Prosopis dulcis*) and similar tree-beans are common; their fruit is pounded in wooden mortars, mixed with water, and handed round in gourds; a handful is taken out, sucked, and put back again; this is continued till all the hard seeds have been divested of their sweet covering, and the refuse is then thrown away. It is not at all a pleasant operation to watch, but it is said that this method of mastication helps the digestion.

Meat is eaten either roasted or boiled, and well cooked.

Milk the native will not touch, nor mushrooms, considering them unfit for food. For other superstitions with regard to food *see* (*N.Q.* xxxvii) below.

Salt is sometimes made from a fleshy plant growing in salt, marshy spots. It is burnt, and the grey ashes pressed into a lump like a stone. A specimen may be seen in the British Museum.

Tobacco (cf. *N.Q.* Part I, Sec. 10) is grown in small quantities in the gardens, which are generally unfenced, and a mile or two away from the village, in order that the flocks of goats and sheep may not trample and destroy them. It is in general use both with men and women, though occasionally an Indian is met with who does not smoke; it is not prepared by being hung up to dry in the usual way, but is picked, pounded in a mortar, spread out to partly dry, and then pressed between the hands into small cakes, which are threaded on a string and hung up in the house. It never turns brown, but remains a dark brownish green, and has a different and softer flavour when compared with properly cured tobacco.

In keeping with his socialistic ideas (*see* below *N.Q.* xxxii) an Indian never smokes his pipe out, but passes it from one to another. It is quite usual for one man to produce a pipe, another to fill it, and a third to light it, and pass it on.

The pipes were formerly of clay (*N.Q.* xi above), but are now more commonly of wood. They are usually decorated elaborately (*N.Q.* xxiv above and Plate XL, 1, 2).

Cannibalism (*N.Q.* xxvi) is not practised. For traditions on the subject, see below (*N.Q.* xxvii, *ad fin.*).

Religious Beliefs (*N.Q.* xxvii).—It has been said that no aboriginal race is absolutely devoid of a knowledge or idea of some supernatural being or higher power; but after ten years' residence among the Chaco Indians, and an intimate acquaintance with their language and customs, one is forced to the conclusion that they have no conception of a God. There is, however, a marked fear of what are called *Kilyikhama* or spirits. These are supposed to be most generally seen at night, and are practically the same as the ghosts of civilized countries. No doubt the Indians sometimes persuade themselves into the belief that they see the shades of dead people, and it is certain that they are strongly influenced by suggestion; but more often, since ghosts are seen at night, they are probably deluded by a chance effect of moonlight, or by a startled animal such as the rhea, which would vanish almost as soon as seen. When a person dies, his spirit is supposed to haunt his old home, and for this reason his relations and friends invariably pull down the house and in a few hours build a fresh one at a respectful distance.

The dances described below, under the heading of "Games" (*N.Q.* lxvii), do not seem to have any religious significance.

Mythology (*N.Q.* xxviii).—There is a tradition of the creation that from a hole in the ground caused by a beetle, a witch doctor commanded that a man and a woman should come forth, and they did so. In this tradition it is difficult to explain the presence of the witch doctor himself; but the story may be incorrectly stated.

I have heard that when the sun sets it is supposed to pass inside the earth, where there is another country somewhat similar to this one, of which the sky or roof is the ground that we tread on, and where the spirits of dead people live. The entrance to this place was described to me as being far in the west, a dark hole leading downwards, the approach to which was very stony and painful to the feet. It is possible that, if this story is true, it may embody some dim recollection of the shafts or galleries of the silver mines at Potosi or elsewhere, which would naturally make a deep impression on an Indian's mind, but they are so reticent with regard to their inner life and thoughts, that it is very seldom they can be persuaded to speak on these matters, and when they do, one has to discriminate between the palpably foolish stories and those in which there may be some truth.

To give another instance of what I mean, there is a story that beyond the Northern Lenguas there is a tribe of Indians who have only three toes and go by the name of "Like-rhea's-feet," and who can run with more than human speed. This I believe to be simply, as one might call it, a "fairy tale." At about the same time I heard a story, that away in the north-west a section of the Lenguas in that part were in the habit of digging, on rising ground, wells so deep that they used a bucket and a rope. This, at the time, I put down to be very possibly a

fabrication, for our Indians almost always dig broad and shallow wells, but afterwards, in travelling to the north-west, I found it to be true in every particular. The wells were on rising ground in a sandy soil, about 15 or 20 feet deep, with a hole at the top only 2 feet by 2 feet 6 inches in diameter, and so made that a man could go down by foot holes on either side (as I myself went down to see how it was made), and a bucket and rope were used.

They also have a story that the Indians who live on the old river beds running east and west, and dry for the greater part of the year, when they get hungry for fish, as they say, are accustomed to send a specially good blanket by a messenger to the far west with the request that the water should be sent down to them. Upon this the people there make a fence or dam in the big river with the trunks of trees and so turn the water into the required channel, and in due time the hungry Indians see their fish. It would be interesting to try and probe the truth of this story. Certainly, on the foothills of the Andes, the practice of damming is well known, and was extensively resorted to even before the Spanish Conquest; so that it would not be altogether surprising if it were used on a larger scale in the way described.

The Pilcomayo River, also, which bounds the Paraguayan Chaco on the west and south, has been an object of tantalizing interest to geographers for many years, on account of the apparent impossibility of following its course, for it is blocked by a water-weed where it spreads out into the Patiño swamp (after the manner of the sudd on the Nile), and also, because there is a greater volume of water in its upper reaches than is found at its mouth where it flows into the Paraguay River. This strange phenomenon has been accounted for in various ways, as being due to evaporation in the great Patiño swamp, or to the water being lost in the great sandy desert of the Chaco, both of which explanations are inadequate. The real reason is, as I believe, that the Pilcomayo (Fig. 1) has a delta which comprises a large proportion of the streams flowing into the Paraguay between latitude 22° S. and latitude 24½° S. Therefore, the flood waters of the Pilcomayo, sent down by the melting snows of the Andes, find their slow and tortuous way through many channels to the Paraguay River. Every year, therefore, the Indians on these old river beds look forward to the flowering time of the grass, because then they expect the water to come down from the unknown west, bringing with it the big fat fish which are only found in the deep, freshwater rivers.

One other interesting story these Indians have, namely, that there is a pigmy tribe living in the forests in the west, shy, and easily frightened, but good little people, and hard workers. They are described as about the size of boys of nine or ten years old, but full grown. I believe this story has been met with in the Argentine territory, and, if so, it is likely that there is some truth in it, for our Indians do not easily communicate with the Argentine people.

There are traditions or rumours, but possibly with slight foundation, of a cannibal race in the west, and the practice of scalping, though not in vogue, is still not unknown to tradition.

Superstitions (N.Q. xxix).—There is deep-rooted superstition with regard to *beetles*, over which insects the witch-doctors are supposed to have a peculiar power (cf. N.Q. xxviii above, and xxx below).

The night before an Indian goes out hunting he may be sometimes heard chanting alone, with his rattle for an accompaniment, for several hours. This is called *yabinyoa*. After a time of rain and wet, when the sun comes through the clouds for a moment, I have seen an old native pick up a fire brand and point it at the sun with an exclamation; by way of encouragement to the sun, as it was explained.

When weary of a wet day and when it has cleared up slightly, should they see another rain cloud coming up, one Indian will say to another, "Iwatakáp," blow! or puff! and the other will say "Schwa," and motion with the hand as if to push back the rain cloud.

Great faith is placed in dreams. It would seem that the spirit really is believed to be absent from the body, and engaged in acting what is being dreamt. But with regard to all the class of beliefs or superstitions which may fall under the head of mythology, it is almost impossible to determine accurately what is in the native's mind, for they are very reticent in these matters, and their reticence has been heightened by the knowledge that the superstition is regarded with disfavour by the missionaries. Moreover, a noticeable point is that a native after telling about his customs will not bear being questioned or cross-examined. If he tell his story one day, and be asked about it the next, he either will have forgotten it, or else will so skilfully steer clear of the subject that no satisfaction can be got, and one is left to wonder if there was any truth in it in the first instance.

Magic and Witchcraft (N.Q. xxx).—Witch-doctors are numerous and powerful. Most Indians believe that they make the potatoes, pumpkins, and other plants to grow in the gardens; yet although while they live these witch-doctors are endowed with supernatural powers, they are believed to die as ordinary men, and are not credited with any exceptional powers after death. There is probably a ceremony of initiation but the secret is jealously guarded. The witch-doctor is supposed to have the power of introducing beetles into a man's stomach for the purpose of killing him, therefore when a man feels his stomach ache, he often imagines that beetles are inside him, and he appeals to the witch-doctor of his particular family to cast them out. The curing is generally done at night. The man is laid on the ground, the witch-doctor sits by his side, and a ring of men sit round. The doctor then begins to spit on and to suck the man's stomach over the painful part, to the accompaniment of an excited though monotonous chant from his assistants. Rattles are also used. After some time the doctor produces, as he is sucking, a beetle, or a palm nut, or a fish bone. If the patient is semi-conscious it is supposed that his spirit has escaped and is wandering round waiting to be recalled. This is done in the manner before described, and the symptoms of returning consciousness are hailed with cheerful relief. A spirit may also be driven out of a patient in the same way. The ear-discs of witch-doctors are generally faced

with bright pieces of glass or bits of polished tin, and these are said to have something to do with the "shadows" or *pis-chische*. As the doctor leans over his patient the glittering glass may catch and reflect some faint light, enough to give him the clue to his statement that the spirit has gone this way or that. Some of the witch-doctors probably really believe in their power to cure, though the more intelligent among them must know that they practise conjuring tricks, and work on the feelings of the people. It must be remembered also that faith helps largely in a cure.

Customs (N.Q. xxxv).—Etiquette is strictly observed in the reception of visitors. A string of visitors advancing in Indian file is seen from a distance, winding towards the village along the narrow Indian path. Discussion immediately arises as to who they are, and where they come from; and as they get nearer, they may be identified as friends or comparative strangers; if the former, their particular friends in the village prepare to welcome them; in any case should there be any food in the village, such as potatoes or pumpkins, or mandioca, fires are stirred up and pots put on. As the strangers come near, the dogs rush out and bark, the women chide them or beat them off with sticks; and the visitors halt a few yards from the house. A chief man goes forward and says a few words of welcome or enquiry, such as "Do you wish to rest?" the leading women of the village then approach, and each woman relieves two or three of the men of their bows and arrows, returning with them to their respective parts of the long open house; the visitors follow their bows and arrows, and are soon seated on freshly dusted skins under the shade of the roof, while a pipe is filled, lighted, and handed round; and the newcomers proceed to answer questions as to whence they come, where they slept the previous night, how many days they have been travelling, and what they have had to eat on the journey. A stranger is not expected to be too effusive, it is quite the correct thing for him to sit almost silent for hours at a time. The men are often accompanied by their wives and children on these visits.

A noticeable and curious habit is the repetition of speech by the listener, especially in leave-taking, which is invariably formal and polite. An Indian ready to leave, with his blanket carefully girded up, and his bundle of arrows stuck through the belt at his side, will come and stand in front of where the chief is sitting by his house, and lean carelessly on his bow, while a conversation such as the following may take place, not in a hurried manner, but slowly and deliberately:—

A. I am going to leave.

B. You are going to leave.

A. I am going home by the straight road.

B. You are going home by the straight road.

A. I shall sleep at so and so.

B. You will sleep at so and so.

A. We shall see fish there in the streams.

B. You will see fish there in the streams, the *savalo*, fine and fat, my word!

- A. Fine and fat, my word !
- B. You will see pumpkins at the village beyond.
- A. We shall see, etc., etc.
- B. You will arrive home by the full of the moon.
- A. I shall arrive, etc. Perhaps we shall kill a deer on the sandy patch.
- B. Perhaps you will kill a deer on the sandy patch.
- A. (*With a sudden air of "well, I must be going"*) I am going away.
- B. Go !

Government (N.Q. xxxvi).—We may here glance at the principles of *socialism* which are so deeply instilled in the minds of these Indians. Unlike many other native tribes who have their chiefs and head men, the Lengua natives rule their lives almost exclusively by public opinion. So-called chiefs there are, certainly, but a better name for them would be "Father of the Family." As far as I know there are no rites or ceremonies in this connexion, the most influential man naturally taking his place as spokesman or head of the little gathering. The chief is also expected to provide for his followers, and in this respect he is more like the father of a family than a chief, in the recognized sense of the word. A young chief once said to the Superintendent of the South American Mission, "Why do you not give me presents? My followers expect me to give them things, and I do so; you are my chief, but I find you do not give me any presents." The more intelligence a chief has, the better he is able to provide for his followers and to work for their welfare. Should an important question be discussed a chief would hardly venture to lay down the law or any particular point where his views were likely to be at variance with those of his followers, though he might wish to do so; he would find out, by listening to conversation, the wishes of the majority, and then carry the matter through as if it was entirely his own idea. A heated discussion is almost unknown; in really serious matters they are very quiet. Only twice in four years have I seen what in England would be called "a row," and in each case a woman was the subject of dispute. The natives are very much attached to each other and to their own country; in telling the story of "the Prodigal Son" to a Christian native, so that he might tell his friends, I found, in spite of repeated explanations, that it was impossible to make him understand that the elder brother could have been aggrieved by the return of the Prodigal; such an idea would hardly find room in a native's mind; it would be considered such "bad form" by public opinion, that he would not be able to bear the disapprobation of his fellows. This feeling is so ingrained in them, that it is difficult to get an Indian to compete against others for a prize which is to be received by only one. Those who lose feel hurt because they lose, and he who wins feels grieved because the others are hurt. Anger there may be, but it is usually cloaked over with smooth words; backbiting and slander come afterwards, as for instance with the Northern Lenguas or Sanapana who occasionally visit the station to trade. They are courteously treated while they stay, but after they have gone it is common for an Indian of the district to come in with the tale that

"the Sanapanas have been stealing the mandioca or pumpkins out of your garden as they passed by."

These Indians are a reasoning and reasonable people, if they are treated as such. Though one may be angry with them, experience teaches that it is wise to keep one's temper, and a quiet reply with a dash of sarcasm in it has more effect than a blustering command; in the latter case the native would properly make no open reply, but subsequently would remark to his friends, perhaps with a smile, "he is cross, he is angry," and he would probably be advised to visit the next village for a day or two. Should a native be dismissed for incapacity it is always well to give him a comforting reason for it; to suggest that his garden at home needs weeding, or that his father and mother are longing to see him again.

Music (*N.Q.* xli).—Chaco Indians are decidedly unmusical as we understand music, being quite unable to follow the simplest tunes. They have, however, droning chants of their own,¹ and a few instruments with a range of only two or three notes. One is a round flat whistle (Plate XLI, 2, 3), which is worn around the neck (Fig. 1); it has a hole at the top which is held to the lips, while the thumb and fore-finger make the notes from two side holes. A kind of flute is also used, made of bamboo or bone; as well as a small rough kind of violin, made from a single block of wood, with one string of horse-hairs and a bow (Plate XLI, 1).

The wind instrument of cow's horn, figured in Plate XLI, 4, is used mostly by the Suhin, Tóóthli, and Western Lenguas, and either with or without the reed mouth-piece which is shown in the figure. Some Indians can blow the horn, which is used for signalling in the open country, without inserting a reed. Those, on the other hand, who cannot manage the horn by itself, insert the reed in order to produce the sound. To the Indian, therefore, the reed seems to be rather a makeshift than an improvement.

Language (*N.Q.* xliii).—The Lengua language is of the polysynthetic order and is of the same general formation and character of expression as the above

¹ In the two examples which follow I can vouch for the words; for I have often recited them to the natives to their satisfaction. The chant has its musical intervals, but they are too vague and irregular to be reproduced in our notation.

1. *Lengua chant*, at *Maning* dance (from a Suhin source). The word *hiuerkla*, upon which much stress is laid, means "moon" in Suhin.

Hé e ní
Hé a hání yá
Hé a hání yá
Hé a í ní
Hé a hání yá
Hé a hání *hiuerkla*
Hé a hání hé i a
Hé a hání hé i a
(Repeat.)

2. *Lengua chant*, at the *Maning* dance, from a Suhin, or Tóóthli source.

Hé-ní-a-á
Hé-ní-a-á
Hé-ní-a-ái-i
Hé-ní-a-ái-i
Ha-é-ní-a-ál-i
He-é-ní-a-ús-a-á
Hé-ní-a-á
Hé-ní-a-á
Há-e-ní-a-ál-i
Ha-é-ní-a-ús-a-á
(Repeat.)

mentioned tribes, though in all of them the tongue itself is different, and it is impossible to class them as dialects one of the other. They do not readily incorporate foreign words into their language, being in this respect unlike other native races, who with a turn of the tongue will make an English word their own. To a New Zealander, for instance, a kettle immediately becomes a *ketara*, but to a Lengua it always remains *mithing chischama-yingmin*, "a thing to boil water in." To a Maori, horse is *hoiho*, but a Lengua calls it *yatnathling* or *yat-napothling*, "like a tapir," this animal being the nearest approach to a horse that he had known before its importation by the Spaniards.

For the numerals see below (*Arithmetic*, *N.Q.* lx).

History (*N.Q.* xlv).—With regard to the origin of these Indians, they themselves say that they come from the north-west, and their superstitions rather point in that direction, for the witch-doctors in the West are said to be more powerful than their own. And in the wearing of their blankets and string bags some connection may be found with those Indians who were known to be subject to the dominion of the Incas four hundred years ago, for bags almost identical in pattern and texture have been found in ancient graves in Peru; and the Indians in the West, at least the two tribes there with whom I have come in contact, are able to weave much better blankets than the Lenguas. But any statement with regard to their origin must of necessity be most indefinite, for they have no tradition of the past for more than a man's lifetime; and leave no monuments by which to trace their history.

Archæology (*N.Q.* xlvi).—It is said that a part of the district now inhabited by the Lenguas was at one time occupied by another race called Paiagua, or "people of the river," and this is corroborated by the discovery of stone axes and pottery, the presence of which can only be accounted for by the natives, by the theory that the pottery belongs to spirits or ghost people, and that the stones fell from Heaven.

Hunting (*N.Q.* xlviii).—The bow and arrow are the principal weapons; and since civilization has brought hoop-iron within their reach, iron arrow-heads are common; these, with their stiff bows, which require a strong arm to use with proper effect, have great penetration. The iron arrow-head (Pl. XL, 7) is fixed into a wooden socket (*b*) which in its turn has a point to be inserted into a bamboo shaft (*c*) bound to prevent splitting. The old wooden barbed arrow-heads (Pl. XL, 8) which are still extensively made and used, need, of course, no socket. The two feathers are always fixed with a slight curve, which gives the effect of a screw, and is quite sufficient to make the arrow spin in its passage through the air. It is difficult to say if this is done purposely, or whether the idea has been handed down till it has become an invariable custom. Most arrows have barbs, but I met an Indian who was travelling in a part of the country where he thought he might chance to meet an enemy and he had provided himself with a bundle of arrows without barbs, saying they were for his enemies. If this proves to be the usual custom, as it well may be, it speaks well for their considerate dispositions. Blunt

headed arrows (Plate XXXIX, 2; XL, 6) are also used, for small birds, by the boys, who begin to handle their little bows and arrows at three or four years of age.

The boys also use a kind of sling-bow, or pellet-bow (Plate XXXIX, 1).

Traps are sometimes used for foxes, and string snares for the rhea.

In hunting the rhea, the natives almost always provide themselves with a large bundle of grass or creepers with which they envelop their head and shoulders. Without this precaution they could seldom get near enough for an accurate shot, but with it the ostrich appears not to notice the approach of the hunter. Dogs are much used in hunting.

Poison for arrows may be known, but is not in general use.

Training of Animals (N.Q. lxii).—All kinds of wild animals are tamed when caught young, but generally revert to their wild state at maturity.

Infanticide (N.Q. lvi) is quite common among the Lenguas; an interval of seven or eight years being always observable between children of the same family. Not only are babies, which are born in this interval, immediately killed, but abortion is also practised. The reasons for this are obvious from the Indian's point of view.

The woman has the hard work of carrying food from garden and field, and all the transport to do; the Lenguas are a nomadic race (p. 281), and their frequent moves often entail journeys of from ten to twenty miles a day, the woman carrying all the household furniture, pots, water jars, wool and skins in a large net bag on her back with a supporting string round the forehead. In one hand she carries a palm-digger (which is a bar of iron sharpened at one end, used for getting at the tops of young palms), sometimes a reed mat, which is used as a roof, occasionally a cat, a fowl, or some other tame animal, and seated on the top, the baby. The man walks in front, carrying nothing but his bow and arrows, for he is the food provider on the journey, and custom allows his freedom from all impedimenta, although he sometimes gives his little boy a lift. Travelling with natives under these circumstances, one is forced to the conclusion that it would be impossible for a mother to have more than one young child to carry and to care for.

The Lenguas are also extremely socialistic, and public opinion on the subject of a screaming child at night is very much the same as among civilized races; while it is customary to suckle children till five or six years of age.

Again, the child of a girl whose first marriage is not a success, and whose husband deserts her, is generally killed at birth, the mother feeling that it is the man's part of married life to provide meat for them both, and failing the food provider she does not care to be burdened with a child, who may also prevent her from procuring a second husband.

It is also possible that medicine men and the head men of a family may have some idea of regulating the population to suit the existing food supply of their particular district. These are the probable reasons for infanticide, though there may be more remote causes of which the Indians prefer to keep strangers in ignorance.

Burials (N.Q. lviii).—As death approaches, a kind of stupor seems generally

to overcome the sufferer, and as Indians are unwilling that death should actually take place after dark, the dying man's end is sometimes purposely hastened by suffocation. This seems cruel, but I believe it is done out of supposed kindness to the victim. When death is due to causes which they cannot understand, and which they therefore attribute to some foreign witch-doctor or *yihothma*, the body is mutilated at death; the stomach being cut open, and a stone being inserted, together with some charred bones. This is supposed to secure the victim's revenge, by killing the offending witch-doctor.

I have only seen one burial, that of a little girl nine or ten years' old. Dysentery was the cause of death, which took place about midday. I was away at the time, and though she was mutilated in the manner described, I did not see the process. She had been carried by her father to a shady spot under some trees about half-a-mile from the house, and when I arrived, was laid down on her right side, covered over with a new apron of red-and-white check-pattern. I uncovered the face for a moment to see if she were really dead, but made no further examination, for I did not wish to hurt the feelings of the parents, who—especially the father—had been very kind to her during her illness, and I am quite sure that anything they may have done to her was done according to their ideas of kindness. I was surprised that they should have buried her with the new cotton wrapper, for they must have valued it considerably. The ground was very hard, and the grave was dug under a tree, 18 inches or 2 feet deep, with room enough for the child to lie on her side in a slightly doubled-up position with the knees drawn up. When they had filled in some of the earth, there was evidently a proposal to kill the child's favourite dog for interment above her, but in deference to my presence it was not done. I believe it was not killed afterwards. A woman who was sitting near produced a ball of wax, and stuck a few snake's teeth in it, with the remark, "*We* will take care of our friends"; this was placed by the grave-side, but whether it was put in afterwards or not I am unable to say. The child's skins, petticoats, and other effects were afterwards burnt close by, and no mound or mark was made to show the position of the grave.

Arithmetic (*N.Q.* lx).—The *Lenguas* can count without much difficulty up to twenty, using, of course, their fingers and toes. Beyond that comes "many," and if a very large number is required, "the hairs of the head" are called into requisition. *Thlama* "one," and *anit* "two," are apparently root words; the rest appear to depend upon them, and on the hands. *Antanthlama*, for "three," appears to be made by these two words joined ($3 = 2 + 1$). *Four* is "two sides alike."

Five:—"One hand."

Six:—"Arrived at the other hand one."

Seven:—"Arrived at the other hand two," and so on.

Ten:—"Finished the hands."

Eleven:—"Arrived at the foot one."

Sixteen:—"Arrived at the other foot one."

Twenty:—"Finished the feet."

Games (N.Q. lxvii).—Several games appear to be universal among these tribes. A characteristic game, represented in Plate XXXVIII, 1, is called "*Hästawa*," and is much on the same principle as our race-games played with dice. About twenty holes are scooped out in a semi-circle on the ground, about 4 to 6 inches long and 4 inches apart. One round hole deeper than the rest is in the centre, and this represents a well or deep stream of water, in which the players may be "drowned" and so put out of the game. The dice are four pieces of wood, round on one side and flat on the other. Two are held in each hand, and brought smartly together, and then are swept off the under hand on to a smooth piece of hide. Even numbers, flat or round, score variously, and allow another throw; odd numbers give the next man his turn. The scoring is done by means of arrows stuck in the holes, and as they are not good at counting, this part of the game appears rather complicated to an observer. But to the players it appears fascinating (though only indulged in at one season of the year) for the sibilant "*häs-*" of the players and the click of the dice as they toss them down may be heard for hours together. An element of gambling is apparent in this game, for beads, and other small articles of apparel, frequently change hands. I believe that this game is meant to represent a war party on a raiding expedition, for little bits of wood or stick, placed in several of the small holes, are said to be "gardens" or patches of mandioca, pumpkins, or potatoes, which are supposed to be destroyed by the enemy, who plays himself into one of the holes and throws out the contents. The players take sides, and the rule is to proceed from one end to the other of the row of holes and back again.

The game of hockey appears to be indigenous amongst them, but it is hard to discover any rules in the general scramble for the ball. I have seen a goal at each end, composed of a pile of sticks heaped up, and as many as forty men playing in one game, among the Suhin.

With their turn of thought, one could hardly expect complicated rules among these Indians, for the idea of keen rivalry or competition seems to find no place in their ideas except in wrestling, at which boys and men are very adept.

A sort of battledore-and-shuttlecock is played by the children, who use their hands for the bat; the shuttlecock is a doubled-up wisp of corn-cob leaves, tightly tied round to form a knob, with the loose ends cut square, and two or three long rhea feathers inserted. These will carry a longer distance than our Badminton shuttlecock.

Tops are known and used, but whether they are indigenous or not it is hard to say. The doll shown in Pl. XL, 4, is merely a small unaltered bone dressed up in rags.

Chaco Indians are very fond of feasts, and any occasional abundance in their food supply is eagerly welcomed as an excuse for one.

Dances form a prominent part in these feasts, and of these dances there are four or five different classes—

(1) That called *Kyaiya* is the most common. It generally commences at sunset, lasting through the night, and the next day and night, and concluding at the

following dawn. The *Kyariya*, which gives the name to the feast, is a gourd rattle. When once started the rattle is supposed not to stop till the feast is over. Mere amusement is connected with this feast, and no superstition, as far as is known. The men stand round in a ring and sway their bodies with a slight motion, as they beat time with the rattles, while the chanting chorus rises and falls. The women join in occasionally, dancing behind with their hands on the men's belts.

(2) The women also have a separate dance of their own, where they appear to protect a young girl from evil spirits, who twine in and out, in line, uttering shrill cries (Pl. XXXVII, 1; XXXVIII, 2). The boys who represent these evil spirits are dressed up in reha-feathers, and wear a bag over their head.

(3) The *Yanmana* is a long feast at which marriages are contracted and during which all the other dances may take place.

(4) The *Wainkya* is so called from the "*Wainkya*," or pot, which, converted into a drum by means of a piece of leather tightly stretched over it, is beaten like a drum throughout this particular feast.

(5) The *Maning* (= "circle") is a series of short song-dances which may take place at either of the above. For the songs at the *maning* dance, see above p. 293 n.

Contact with Civilized Races (N.Q. lxxiv).—It is too soon yet to comment definitely on the effect of civilization on the Lengua Indians. In many ways they are undoubtedly open to good influences. Morality, for instance, which is generally so low in native races, is with them so high that they compare favourably with all but the higher class of the civilized Spanish-speaking population, their neighbours over the river. Of course there is room for improvement, but in teaching, for instance, that a man should only have one wife, we are emphasizing their own unwritten law or custom. At the station of the South American Missionary Society, a marked improvement is observed in the manners and behaviour of the Indians who are resident there. They become open and frank, clean and smart in their dress, quick to learn and dependable.

It is not to be expected that their nomadic habits would be cast off in a day: a generation would be short in which to effect such a change, and it is found wise when they get restless, or dull, after a month or so of continued settled occupation, to change their work, or to let them visit their friends for a time. They are not encouraged at the mission stations to alter their style of dress, though they themselves are delighted to throw off their heavy woollen blankets, and to don European shirts and trousers. Yet these do not become them so well, and are less healthy. Indeed, the wearing of the left-off clothing of Paraguayans becomes a source of actual danger to them, on account of infectious diseases, from which, among themselves, they are remarkably free. Those Indians who go and live at the "Coast," as the banks of the great Paraguay River are called, are brought in contact with that debased form of civilization which everywhere obtains on the borders of a new country, and rapidly give way before its evil influence. Drink, of course, in the form of the common cane-rum, plays havoc amongst them.

Missionaries are sometimes blamed for penetrating into new countries, but their influence for good on the natives amongst whom they have settled in the Chaco, when these are compared with the raw material, or with those who are often met with in the town, cannot for one moment be doubted. Yet at the same time it must be confessed that by their very good works they have placed an obstacle in their own path, and in that of the future welfare of their converts. Fifteen years ago no Paraguayans would enter the Chaco, unless well armed and in large numbers. Now you may travel in all parts unarmed, and alone, if you wish it, with only native companions. In consequence of this, which is the effect of the British missions, the country is now being filled up rapidly with Paraguayan settlers, who have but a poor influence on the native life and character.

The Paraguayan Government having sold every acre of land in their part of the Chaco, there is no provision whatever for Indian reserves, and an Indian has no more social rights, until he is baptized, than a tiger or other wild beast, and this is the light in which he is generally looked upon in South America.

The British public does not appear to sympathize with the combination of Industrial with Missionary work, and seems to consider that the Gospel alone should be sufficient enlightenment to enable an Indian to find his level in the daily increasing strife of race and creed. But to an unbiassed observer it is evident that if no means can be taken to prevent the increasing influx of a debased form of civilization whose chief agent is rum, it will not be many generations before there are no more Chaco Indians to discuss.

. Plates XXXV, XXXVI, XXXVII, XXXVIII and XXXIX, 1, are from blocks kindly lent by the South American Missionary Society.

THE NATIVE TRIBES OF MANIPUR.

BY T. C. HODSON.

[PRESENTED 10TH DECEMBER, 1901.]

MANIPUR is the foreign, the Hindustani name for the country which the people themselves call the *Meithei Lei-pak*, the broad land of the Meitheis. The Burmese call it *Kathay* or *Kassay*, while the Bengalis and Assamese call it *Moglai*—a variant on its Naga name *Mekli* or *Mekri*.

The Meitheis themselves have—since their conversion to Hinduism—put forward a claim to descent from Arjun, one of the Pandavas, who once visited the valley and, like many a foreigner since, married a woman of the country who became the ancestress of the race. In support of this claim they point to an obscure passage in the *Mahabharat*. We may safely reject this claim because their own records prove that prior to the advent of Hindu missionaries in the beginning of the eighteenth century the Meitheis were very much what the hillmen are to-day, only with a greater amount of material civilization and culture. The language is unmistakably allied, and that closely, to the Chin, Lusei, Kuki dialects. The people are in feature of the Mongoloid type and in no way resemble the Aryan or Aryanised peoples of Hindustan.¹ Among all the hill tribes in State is current a tradition which declares the Kuki to be descended from the eldest of three brothers. The youngest brother is the ancestor of the Manipuris and the descendants of the middle brother are the Nagas. In one or two Tangkhul villages, side by side with this tradition, I have heard a story which brings the Nagas from the valley whence they emigrated to the hills because they found the heat and the mosquitoes quite unbearable.

Among all primitive peoples the holder of the kingly office is a person of the greatest importance and interest. I hope to show that Manipur is no exception to this rule, and my notes will mainly deal with the mysterious and interesting ideas and ceremonies connected with the position of the king in Manipur. The word for king itself (*Ningthou*) seems to mean “the person who may do the thing he will, and is a very apt word to use of a being who is regarded and addressed as one but little inferior to the gods themselves.

I do not know, and I have not been able to discover, when or by whom was started the belief that the rule of succession to the throne of Manipur was that of brother succeeding to brother. The records disclose a very different state of things. If there was any rule at all, it was that of primogeniture, modified very considerably by the theory that might is right. There is, however, a good deal of interesting mystery about the succession of Garib Nawaz or Pamheiba, whose

¹ For physical measurements of the Meitheis (Mitais, Maithais) see Waddell, *Journ. As. Soc. Bengal*, lxi, Pt. iii, p. 114 (Calcutta, 1901).—[Ed.]

predecessor was Churai Rongba, who coquetted with Hinduism and finally reverted to his pristine creed. It is said that in a dream or from a prophecy Churai Rongba learnt that he was destined to be slain by his own son. He determined to avoid his fate if possible, and therefore whenever one of his wives presented him with a son and heir, the babe was promptly put out of the way. It fell out that the principal Rani was delivered of a son at a time when the Raja was away on an expedition. A stillborn child—a boy—the son of one of the Raja's slaves, was shown to the world as the royal babe, and the living infant was stealthily conveyed by night to a Naga village in the hills, where it was reared. In the course of time, Churai Rongba discovered that he had a living heir. He then invited all the Naga children of the age of his son, to look on at some boat races. They were treacherously massacred, but the young prince somehow managed to escape. A little later, Churai Rongba came across his son, and, struck by the lad's intelligence and courage, all unwittingly made him one of his personal attendants. Pamheiba then heard of the prophecy and of his royal origin, and succeeded in killing or some say accidentally and in ignorance killed his father when they were out hunting together. Pamheiba, too, was in his turn killed by his son Ugut Shah. The Naga village Maikel, which in this tradition is said to have afforded shelter to the prince, was given the privilege of precedence above all other Naga villages on the day when the great annual Naga sports are held, as a reward for their protection and help. This village has a monumental stone which they say marks the place whence the common ancestor of the Nagas, the Manipuris and the Kukis, emerged from the darkness below.

An educated Manipuri once told me when we were discussing this story that there was another legend that the son of Pakhongba, the snake king, the semi-divine ancestor of the royal clan, unwittingly killed his father, mistaking him for a snake. For this reason, the taint of parricide clings ever to the royal house of Manipur. Among the Tangkhul Nagas, when a son marries, his parents and the rest of the family have to move out from the old house and build themselves a house somewhere else. This rule too applies to the succession of certain hereditary village offices which are now-a-days sacerdotal rather than regal.

On the restoration of Gurusham, the representative of the lineage of Garib Nawaz, it was found necessary to associate with him in the kingly office his younger brother Jai Singh, because, so tradition says, Gurusham was a cripple and therefore not altogether fit to exercise royal functions which then as now include a good deal which in more elaborate societies are reserved for the priest.

The coronation of the Raja of Manipur is by all accounts an imposing and interesting affair. There are in Manipur seven clans, four of which own kings, titles even now of considerable dignity but historically survivals from the time when these clans still preserved their independence. The Angom Ningthou, or king of the Angoms, is generally, by some accounts he must be, a relative by marriage of the Meithei Ningthou, and custom demands that his coronation shall precede that of the Raja by a few days.

The Raja and his Rani go to their coronation clad in a costume which, but for the greater sumptuousness of the royal apparel, is that of the Kabui Nagas. The Raja is always attended by one or two Manipuris wearing Naga costume, and in the royal enclosure is a house built in Naga fashion. The state head-dress is adorned with a protuberance somewhat like the curious horn into which the Marring Nagas wind their hair. Wrestlers, too, when performing before the Raja (and only then) wear a *pagri* done up in this curious way.

To return to the coronation ceremony. With great solemnity the Raja passes between two massive stone dragons which stood (they stand no more) in front of the coronation house. Somewhere inside this building was a mysterious chamber containing a pipe which led, so men said, to the depths of a cavern below where dwells the snake god, the deified ancestor of the royal family. The prosperity and length of the Raja's reign were believed to depend upon the length of time he could manage to sit upon the pipe enduring the fiery breath of his forefather in the place below. His troubles were not over with this ordeal, for outside were gathered the soothsayers and wise men of the country, who carefully watched where and on what stones he trod as he passed out. Thus they knew the fortune of the reign.

In Manipur they have a noteworthy system of keeping count of the years. Each year is named after some man, who—for a consideration—undertakes to bear the fortune good or bad of the year. If the year be good, if there be no pestilence and a good harvest, he gets presents from all sorts of people, and I remember hearing that in 1898, when the cholera was at its worst, a deputation came to the Political Agent and asked him to punish the name giver, as it was obvious that he was responsible for the epidemic. In former times he would have got into trouble. Sometimes a special ceremony was observed by which a criminal obtained a remission of his punishment by taking upon himself the sins of the Raja. A large scaffold was erected and on the upper story the Raja and Rani bathed. Below sat the criminal and his wife receiving the royal ablutions. After the bathing operations were finished the pair below were given the old soiled raiment of the purified people above, and these carried with them the sins and the guilt of the royal consciences.

In Manipur the prosperity of all classes depends on the strength and the regularity of the rainfall, and we find, therefore, that in the valley and in the hills there are many rites and ceremonies to secure a proper rainfall. In Manipur where Hinduism prevails, despite the prolonged existence of the earlier religious system, we find rain ceremonies with Brahmins as the chief agents, and other more primitive ceremonies at which the representatives of the primitive religion preside. Indeed, I have found that whenever we find a ceremony exclusively in the hands of the *maibas* or *pibas*, the ministrants of the earlier system, we have to deal with a survival from pre-Hindu times. Where rain is wanted, 108 girls milk 108 cows in the temple of Govindji, the incarnation of Krishna most popular in Manipur. If this fails, the women throw their *dhan*-pounders into the nearest pool, and at the

dead of night take their clothes off and plough. These are ceremonies known in India, in Behar, where too, as in Manipur and among the Kabui Nagas, men perfectly nude wander about at night allowing themselves the widest extravagance in the way of abusive language that oriental imagination can run to.

Surely the rain-gods that sleep or are careless of mankind will listen to these tales of woe; but if these artifices fail, the Raja, almost a deified person himself, and the descendant of a semi-divine hero king, must play his part and save his people. He may, like the common herd, attempt to move the obdurate powers to pity his sorrow and inglorious nakedness. He may lead a procession to Nong-maiching, the great hill that rises sheer and steep from the plains east of the capital, where he must perform a magic rain-compelling rite, transferring water from one spot to another and worshipping a quaint stone which is believed to have a mysterious connection with the rain, and according to imaginative people is shaped like an umbrella. Every year a great procession worships at this hill, but its special efficacy depends upon the presence of the Raja. Etiquette requires that a special vocabulary should be used in addressing the Raja, who is in all matters regarded as semi-divine. His children are all called *sena* or golden, an adjective of great sanctity, and even his grand-children are called the god-like.

The Meitheis are divided into seven exogamous clans, and there is a good deal of evidence to show that at least three clans have disappeared. The head of the clan enjoys a peculiar position. He performs acts of worship on behalf of the clan, and represents it in all matters that pertain to the jurisdiction of the greater gods, not Hindu deities, but the great nature gods of the older religion. The head of the family manages the relations with the lesser deities, while the head of the house looks after the interests of the house god. Before a sacrifice of any sort the *piba*, or head of the clan, must become spiritually pure. Vexatious, indeed, are the many restrictions to which he must submit. All the clans worship a tribal deity who is very obviously the eponymous ancestor. Each of these tribal deities has his special flower, fruit, fish, and animal, which (and no others of their kind) are acceptable offerings.

There is a tabu object to each clan. In one case only is it an animal. In two cases each it is a fish or a bird or a vegetable object. Should any member of the clan touch the forbidden object, he is supposed to become speedily afflicted with some mysterious disease. Special tabus can be created. A man once fell from a mango tree and was killed. The *piba* of his clan then declared that particular tree to be "sacred" to his clansmen, and none of them ever now come near it. Near Imphal, the capital, are two fine peepul trees, beneath which, according to tradition, lie the bones of the Moirang tribesmen who fell in the great decisive battle which nearly five centuries ago terminated their struggle with the Meitheis. No man of the Moirang tribe will, to this day, dare to walk between them.

All the passes over the hills to Manipur are crowned with abodes of the hill-spirits, who protect and help the weary traveller. Manipuris as well as Nagas deem it wrong to pass these spots without laying an offering of rice, or occasionally

a pice or two, upon the stone which marks the abode of the spirit. They regard as very sacred the groves of trees, which here and there are found on the top of bare knolls. Many a tale is told of the malignant spirits that dwell in the deep pools of rivers. There is a profound belief in vampires—*hing chabis*—things that, as the name shows, eat live people, and dwell in dark secluded glades. The Manipuris attach great importance to omens, dreams, and soothsaying of all sorts. Great reverence is paid to the Maibis, women who are specially devoted to the worship of Pakhongba, the snake personification of the apotheosised ancestor of the royal clan. When the snake appears in a tiny shape, all is well with the State. His head is golden in colour and is shaped like that of a bird.

Excluding the Brahmins as the priests of a foreign cult, we find that the sphere of influence of the *piba*, the head of the clan, is strictly religious and sharply separated from that of the *maiba*, who deals only with the magical side of the supernatural and is often a specialist, having become the doctor of the community. I regard it as probable that in former times some form of ancestor worship was practised in Manipur. The records say that the conversion of Garib Nawaz to Hinduism was followed by the exhumation and cremation of the bones of his ancestors. Is it possible that the Manipuris are, in a way, right when they say he did this because he revered his ancestors, and was convinced that, although they had not known Hinduism in their lives, they had yet a chance of immortality in the Hindu heaven if their pious descendant were to dispose of their remains in the Hindu fashion.

The Naga tribes in Manipur are all divided into exogamous groups which are said to derive their origin from brothers or near relatives, the eponymous ancestors of the *khel* or group. Relationship is reckoned by male agnatic descent and the rule of exogamy is strictly followed.

When a child is born, both parents remain in seclusion and are considered unclean for a period which varies from five days to a month. Some tribes insist on a longer period of seclusion when the child is a boy or for the first-born child whatever its sex. It is generally usual to give a child a name, some sort of a name (not necessarily or by any means the name which it is to bear through life), as soon as it is born, because a child without a name is particularly liable to be annexed by some wandering homeless spirit, of which there are plenty about. One tribe, the Marrings, does not give individual or particular names to the children, but has a rule by which the eldest son is called Moba, the second son Tewa and so on, girls as well as boys having names fixed for them by the priority of their birth. Nicknames from some personal peculiarity serve to distinguish them, but if at any time in later life the parents fancy a special name for a child, they may change the name if they can afford to provide a *mithun* and thirty jars of rice beer with free rations of salt and rice for the entertainment of the whole community. Sometimes the luck of the name proposed for a child is ascertained by consulting omens or by having regard to the parent's dreams.

Among all the tribes, it is customary for the husband to pay a price for his

bride to her parents. Sometimes the price is fixed by custom, but among the Kukis the rank and status of the bride's family are factors of considerable importance in fixing the lady's price. Should a couple run away together, some, but not many tribes, insist on turning them out of the village altogether, but in most cases they are only forbidden to enter the house of the girl's parents until the price has been paid together with something extra by way of fine.

Among the Kukis and Tangkhul Nagas is found what may be regarded as a survival from the times when women were systematically captured and made the wives of their captors. The bride is escorted to the bridegroom's village by a posse of young men of her clan or tribe. They meet and wrestle with the champions of the bridegroom's village. They believe that the longevity of the bride and bridegroom depends on the success of their friends in this friendly contest. There are other villages which observe this custom, but only when the bride comes from another village, never when she comes from a different group in the same village. In the case of the Kukis and the Kabui Nagas, when a man's wife dies, he has to pay her parents or their heirs a fixed sum which is called the price of her bones. This price is the same in amount as that originally given at the time of the marriage.

When the eldest of a family of brothers dies, leaving a widow, the Kukis make the younger brother marry her, but the elder brother may not take the widow of his younger brother.

All the hill tribes bury their dead, but in the case of a Raja or specially great and influential man, the Kukis have a rather unusual method of disposing of the body. They place the body in a hollowed trunk of a tree, plaster it carefully with mud, then carry it thrice round the village, and then, amid the wailings of the women, the noise of gongs, cymbals, horns and guns, deposit the box upon a *machan* or raised stage. To dispose of the products of decomposition, they insert a bamboo pipe leading from the box to the earth. After a month or so, they wrap the bones and skull in a new cloth and bury them. Provision has always to be made for the comfort of the deceased in the world hereafter. In earlier times slaves were put to death, nowadays fat animals only are slain. The clothes worn by the man in life, his weapons and implements, are buried with him. There is never the same degree of elaboration in the funeral ceremonies of women as in those of the men.

Special rules exist for the burial of special cases of death. Women who die in, or from the effects of childbirth, those who are slain by an enemy, or are killed by a wild beast, or who die far from their home, of cholera or some disease or who chance to fall from a tree and are killed, are regarded as peculiarly unfortunate in their deaths as the manner of their end betokens that they owe their fate to the hostility of some powerful and malignant spirit. The graves of the dead who die in the ways I have enumerated, are dug by a special class of people, sometimes only by the oldest men and women, and in some cases only by the near male relatives. Their graves, too, are nearly always apart and away from

the graves of the ordinary dead. Among the Tangkhuls, when a man is killed by a tiger, they kill a hunting dog and put a sharpened thorn and a strong spear in the grave, that the deceased may have a helper and weapons to defend himself if he should chance to meet with a spirit tiger on his way to heaven. In another case, for three nights after the burial of a man who has been killed by a tiger, his brother or some near male relative keeps watch and ward over the grave, lest the tiger come. A man, too, who has been killed in war is buried outside the village on the side opposite that where his enemies live.

If a woman dies in childbirth, and the child survives, it is or was customary among the Kabui Nagas and among the Kuki Lusei tribes to bury the living infant with the mother because the child is so obviously possessed by an evil spirit that its instant removal is necessary.

Among several of these tribes is found the custom of secluding for a period the inmates of a house where an animal has had young or has died. The period of seclusion varies greatly, as a rule it is most for a cow and least for a dog. Nearly all of them treat the cat with some respect, at least when a cat dies, it is wrapped up in a cloth and buried amid lamentations in a grave dug for it by the old women.

There are many interesting prohibitions, ordinances, and regulations among the hill-folk. There is one village, once the powerful head of a very large group, which believes itself to be descended from a lady of a porcine figure. It, and the villages subordinate to it, are therefore forbidden to eat of the pig. The Tangkhuls never eat goat in their own villages, because they think they would run the imminent risk of madness, and all sorts of illness. Indeed, more than once have I been told that they look on goats and their kids as very human. These are general prohibitions, but there are special rules for classes of persons, and for individual cases as well. The scale of diet allowed by custom to the *ghennabura* or religious head of the village is always extremely limited. The savoury dog, the tomato, the *murghi*, are forbidden to him. Unmarried girls are not allowed to eat dog, or in some cases the male of any kind of animal, while nobody knows the awful misfortunes that await the woman who when about to become a mother should eat bear. If a man is wealthy enough to feast his whole village, and erect a memorial stone, he is entitled to become subject to the same dietary disabilities as the *ghennabura*. He wears the same special clothes, and for the space of a year at least he must not use a drinking horn, but must take his daily drink from a bamboo cup. So is it that there, as here, there are penalties on greatness.

All sorts of things cause these periods of seclusion to occur. If the village is burnt, if they lose a member of the village in some remarkable way, if a woman dies in childbirth, or if there be an epidemic of sickness, the *ghennabura* orders the village gates to be shut. In fact, whenever an event occurs which interests or alarms the community as a whole, especially if it be explicable only as a manifestation of some supernatural influence, a period of seclusion is necessary. The village gates are shut and all strangers, who at the time happen to be inside

the village, are necessarily refused egress. If by inadvertence a man should violate any one of the many rules that must be observed on these occasions, he has to pay a fine, generally to provide a substantial repast for the village elders.

The *ghennabura* of a Naga village has a good deal of indirect authority, in virtue of his power to close the village and to declare a *ghenna*. There are of course annual festivals, when the stranger that is within the gates may not go forth, and the friend that is without must stay outside. These are festivals connected with the crops—before the rice is sown, when the blades appear, and as harvest thanksgiving. Drunkenness and unusual licence characterize these scenes. Among the Tangkhuls we find a curious custom. Before the crop is sown, and when it is reaped, the boys and girls have a tug-of-war with a tough rope of twisted creeper. Great jars of rice beer are set ready, and the severity of their ordinary morality is broken by a night of unbridled licence. The Kabuis, however, insist upon the strictest chastity on these occasions, most especially from the *ghennaburas*, who as among the other tribes have to sow first, to reap first, and always take the omens on behalf of the village. The Kabuis, I may explain, live in permanent villages, but subsist on *jhum* cultivation. There is a regular sequence which determines the fields and areas to be cultivated year by year, but in spite of this the omens are always carefully taken.

The two *ghennaburas* in clean clothes sit opposite one another holding twigs of cane in their hands. When the twigs begin to turn, they declare where and in what direction the cultivation is to be. There are many ways of taking omens. Some people break eggs, and from the resultant mess declare the prospects of the harvest. Others kill a fowl and watch the convulsive struggles of its feet in its death agony. If the right foot crosses over the left all will be well. I have seen omens taken by splitting a leaf, and by cutting chips off a piece of bamboo. Some Nagas foretell the success of an intended hunting expedition by their success in kicking small flat stones on to the top of a bigger stone. There is of course a profound belief in dreams as affording distinct unerring indications of the intentions of Providence.

In general they regard the future world as very similar to this. The Tangkhul who can afford it always kills a buffalo at his father's funeral because the God who keeps the gates of Heaven appears to have had enough of the amiable Tangkhul, and endeavours to keep the gates shut against them. The buffalo, of course, butts the gates open and lets the deceased and the expectant crowd of other souls in. That explains why they never or very rarely kill a pig at a funeral. It is a tiresome animal to manage, and is as likely as not to wander off with its master and owner to some very undesirable spot. They say that if a man has been brave and courageous in this life, he is welcomed in the after world by those who have gone before, but the coward is met with groans and jeers. The Tangkhuls are most precise in the localisation of their heaven. The way to it leads up the steep spurs and over the mighty crest of Sirohi-furar, a peak that dominates the scenery of their country.

They are particular to see that the cloth that is buried with the body intended as a present for the God of Heaven is not torn and is thus distinguished from the property of the deceased. If a Tangkhul's parents predecease him, when he dies, in his grave are put a flask of rice beer and a plate of rice to be given to his parents when he meets them.

The Eastern Angamis, however, regard heaven as a place with a number of compartments, one reserved for the worthy dead, another for those who fall on the field of battle. All the women who die in childbirth congregate together. The men whose ears are split or torn have a place set apart for them. I may add by way of explanation that nearly all the hill tribes regard a split or torn ear as a mark of special disfavour of some superior being.

There is a very common belief in the idea of re-incarnation, but they all strenuously maintain that no man can return to this world whose death shows him to have incurred the hostility of the powerful spirits.

Each tribe has its own method of inducing a regular and plentiful supply of rain. The Tangkhuls cut a pig up into eleven portions, and the women make eleven rice cakes. The head of the village, with five men and five women, goes outside the village and offers these delicacies to the powers that be upon one of the memorial stones. Sometimes he has to gather eleven water-worn stones from a river-bed and wraps them up in river-weed.

Other tribes practise a ceremony of symbolical transference of water, as if they wished to explain to the powers in charge of the rain that they desire him to imitate exactly what they are doing. In some cases a pig, with its feet tied securely together, is drowned in a pool near the village. I have come across a fish hung up on the village gate as a rain-making rite, and was in one case told that it was usual to cut a fish, generally an eel, into small bits which were scattered on the irrigation cut, and on the river bank.

The Chirus catch a crab, tie a thread to a claw and put it in an earthen pot filled with water. The head of the village goes to the village gate, and keeps on lifting the crab out of the water, and lowering it into the pot again until tired.

In an interesting Eastern Angami village I was told that when they wanted rain the head of the village takes a brand burning from the fire, puts it on the grave of a man who has died of burns, quenches the brand with water, and prays for rain.

While the crops are on the ground, no hunting or fishing is allowed. They may not trade, they may not perform on their bamboo bugles, nor indulge in any pastime. Grass and trees must not be cut, nor may the women weave.

I hope at some future time to publish a full account, historical and ethnographical, of these people.

DISCUSSION.

Mr. GOMME congratulated the Institute upon getting observations on a people, unmixed with any theories of the observer. This is what the Institute desires more

than anything else. He would venture to ask the author if he would preface his paper by a note of definition of the series of terms used to describe the social features of the people. The terms were, if he remembered rightly, tribe, clan, house, village, community, and what was wanted was some information as to the relationship of the social unit these terms connoted to each other. In particular, what was the relationship of the clan to the village? Was the village composed of several clans, and if so, would tribe mean a group of villages or a group of clans which would be spread over many villages? In short, how are locality and kinship related? It would, he ventured to add, be extremely useful if a prefatory note explaining these points could be given. One further query, which he would like to put, had relationship to terrace-cultivation—did it begin from the top of the hill or from the valley?

Mr. HODSON, in reply, said:—I use the word tribe to denote a number of people speaking closely allied dialects. The term is therefore partly linguistic, but it also connotes a certain amount of geographical propinquity as well as a high degree of general resemblance of dress, coiffure and customs. The clan is a term connoting in theory, community of descent; and in every Naga village there are several, sometimes many clans—constituent units—living each in its own area, between which there may be hostility as between villages hostility may exist. Very seldom does it occur that a clan, or *sagei* as it is called in Manipuri, in one village will consider itself related to, and therefore forbidden to marry with, a similarly named clan in another village.

These remarks do not apply to the Kukis, among whom the belief in a common descent is strong, so strong that most of them know their pedigree up to Thado, the ancestor of the Kukis, whose sons are the eponymous progenitors of the various clans. A Kuki village is generally composed of members of one clan. Sometimes we have mixed villages, but then we find some historical event in the past to explain its formation. A Mangvung village, a village with a Mangvung chief, will as a rule have only Mangvungs in it, people who pretend to be able to trace their descent from Mangvung, a son of Thado. The Kukis are migratory, from the force of circumstances, and possess a strong fissiparous instinct which is in no way checked by the *Fax Britannica*. The Nagas live in permanent villages, and the power of the head of the village depends mainly on his exercise of the sacerdotal functions, while among the Kukis, the house or head of the village is a secular authority whose interference in religious matters is limited to certain formal occasions.

A word or two about the terrace-cultivation. Such cultivation is only possible when the hills have an easy slope to the valley. The best and oldest fields are, I think, those half-way up the hill, and the worst and most recently formed fields are at the extreme top and bottom, which mark the margins of cultivation. The lower margin is capable of more extension than the upper, because it is, generally speaking, easier to irrigate fields at a lower than at a higher level. They cultivate the valleys in very much the same way with excellent results. I know irrigation channels which come at least three miles from some ravine or gorge before the water reaches the fields.

ON A COLLECTION OF PALÆOLITHIC IMPLEMENTS FROM SAVERNAKE.

BY EDGAR WILLETT, M.B.

[PRESENTED 26TH NOVEMBER, 1901. WITH PLATES XLII, XLIII.]

To begin with, I wish to disclaim all pretension to have discovered this find, the credit of which entirely belongs to Mr. J. B. Dixon of Pewsey. Early in September I heard that a large number of palæolithic implements had been found near Savernake and I saw several specimens. In consequence I went to Savernake and succeeded in securing some specimens, and it is at the suggestion of Professor Boyd Dawkins that I now exhibit them to the Anthropological Institute. Besides Mr. Dixon, Mr. Brooke of Marlborough, Dr. Hedley Visick of London, and Mr. H. S. Toms of the Brighton Museum had all secured specimens, which are now being exhibited.

The reasons why I have brought the subject before the Institute are two:—(1) the number and consequent importance of the find, and, (2) the fact that, so far as I have been able to ascertain, no palæolithic implements have been previously discovered anywhere in this locality nearer than Salisbury which is distant about twenty miles. The history of the find, so far as I can ascertain it, is as follows. Early in the present year Mr. Dixon found several good specimens in the heaps of stones by the side of the road leading from Burbage to Marlborough, rather nearer the former place, and about a mile from the Savernake Station. On inquiry, it was found that all these flints came from a particular gravel pit, situated near Knowle Farm in the north-east part of Savernake Park, and about half a mile from the Marlborough and Hungerford Road.

As to the locality: Knowle Farm and its gravel pit are situated on an outlying deposit of the River Drift, and are about three miles south of the Kennet, one of the largest tributaries of the Thames; it comes well within the catchment basin of the Thames, but hitherto, or so far as I have been able to discover, no palæoliths have been previously recorded from any locality in the Thames Valley farther west than Wallingford.¹ Bemerton and Milford Hill near Salisbury are of course well known localities, but they are in the valley of the Avon running south. Further, neither in Sir John Evans' book on *Stone Implements*, nor in the carefully prepared map at the British Museum, is the locality notified.

¹ Mr. A. M. Bell (p. 315) notes specimens from Oxford, and from Broadwell.—ED.



1-7. FLINTS FROM KNOWLE FARM QUARRY, SAVERNAKE ; SHOWING GLASSY SURFACE.
 8. FLINT IMPLEMENT FROM ABYDOS, EGYPT (IN PITT RIVERS MUSEUM) ;
 SHOWING SIMILAR SURFACE.



FLINT IMPLEMENTS FROM KNOWLE FARM QUARRY, SAVERNAKE.

The pit, which I have seen, is situated on the side of a hill which looks towards the upper part of the Kennet Valley, the river being about three miles to the north. The contents of the pit consist of a rather fine sandy gravel of a greyish colour containing at first sight few stones large enough for use as road metal; it is largely owing to this fact that so many worked stones have recently been saved. In consequence of its small size, all the gravel is sifted by hand twice before it is carted away for use on the roads; the finest is used as sand for building, the next size is used for garden paths, and the largest and coarsest is used for the roads, for which purposes the larger stones are finally broken up.

The pit is only worked by two labourers, one of whom is a very intelligent man with a very good eye for stones, and few implements worth saving now escape him. Earlier in the year, however, before his attention had been called to the subject, all the large stones (*i.e.*, after the sifting), comprising literally many hundreds of very good specimens, were carted down to the road near Savernake, where so recently as last September and October, on the occasion of two visits, I was fortunate enough, as I have already said, to secure some very good specimens which are among those now shown.

My friend Dr. Hedley Visick, who has kindly lent me some of his specimens to make the series more complete, was staying at Marlborough during the summer, and visited the gravel pit on one or two occasions, taking part in and watching the digging; he tells me that nearly every wheelbarrow-full of the gravel contained a flint worth keeping. A barrow contains five or six sieves full; this will give some idea of the enormous quantity that exist in the pit. I am further told that the largest and best shaped implements (Type A 1) are usually found at a depth of 10 or 12 feet from the surface.

The series shown to the Institute has been made up of selected specimens from three sources; (1) my own collection consists of about 60 well marked implements; (2) Dr. Visick has considerably over 100; (3) there are over 250 belonging to the Brighton Museum and collected by its curator, Mr. H. S. Toms. I have thus been fortunate enough to have had over 400 from which to make a choice, and I am much indebted to Dr. Visick and the Corporation of Brighton for the loan of many interesting examples.

The specimens group themselves into several types.

A. *The oval* or flat ovals. This is much the most important group, and may be subdivided into three or four sub-groups.

1. *The long ovals*, measuring about 6 inches in the long diameter by 3 or $3\frac{1}{2}$ inches across; of these I can show two good specimens.
2. *The short ovals* with a less pointed end, measuring from $2\frac{1}{2}$ to 3 inches in length by about 2 inches in width; this is a fairly common type; one small specimen of this shape is of chert and not flint.
3. *Short ovals with a point*. Of these there is a graduated series, 5 in number, the largest measuring 4 inches by 3, the smallest 2 by $1\frac{1}{2}$; they are all very similar in shape, and are noticeable in that they all

have a sharp point at the smaller end. All the above are completely worked at both ends and all round, leaving very little of the original flint surface.

4. Next to these are three specimens very similar in general outline, but *only* worked at the edges; these three all come from Dr. Visick's collection.

B. *Hammer stones.* I do not use this name in the sense that these implements were used to hammer other stones exclusively, though some of them show signs at the thicker and less worked end that they have been used for this purpose. These are all of a much rougher character than type A; in fact, in looking at any single stone, doubts might well be entertained as to whether it had been worked or not, but it seems quite impossible that the shape of the eight or nine specimens shown can be accidentally so nearly alike; they are all more or less pointed at one end, while at the thicker and blunter end part of the natural surface of the flint still remains.

C. *Wedge-shaped stones.* This type follows closely on the former, the one almost merging into the other in some cases; some of these show very well the "shoe shape" described by others.

D. *Rymers or borers.* Of these again there are one or two varieties: (1) Sickle shaped, of which Dr. Visick lends me three almost identical in size and shape; (2) A remarkable type with a large unworked base; (3) A third variety with a double edge.

E. *Throwing stones.* This again is a very rough type, and it is only by comparing a number [ten were shown] that the conclusion is arrived at that their shape is not accidental. Many of them [E'] have one broad end and one narrow forming a kind of tail; they may be only scrapers.

On looking over the series several points will be noticed: (1) There is an absence of the usual triangular common palæolithic type, such, I mean, as is shown in most of the specimens from the lower part of the Thames Valley; (2) Most of the short ovals have a peculiar mottled appearance, while many of type B are black or nearly so, and very few show the usual reddish-brown staining by iron.

As to the surface, and amount of weathering. There are four specimens [labelled H 1, 2, 3, 4] which are worthy of comparison; they are all very similar in size and shape; one [1] is hardly worn at all, the edges and surface being fresh and sharp; one [2] is much worn by water; [3] is stained of an earthy-brown or rusty colour; [4] is apparently composed of chert not flint, and is nearly white. They all belong more or less to what I have called type A₂. Another specimen [labelled G] is interesting as being almost neolithic in shape, while yet another approaches the type of implement found near the mouth of the Thames, except that its surfaces are not equal, one being much flatter than the other; this shape is, as I have said, rare; it is worked at the broader end, an unusual feature in the common palæolithic type. I should like to draw attention to five specimens [labelled L 1, 2, 3, 4, and 5] which do not readily come under any particular type; they are all very rough,

but to my mind are exceedingly interesting, partly from their rough and unfinished character and their possible connection with the so-called "Eoliths"; some of them are notched, which I believe is characteristic of many Eoliths, but they do not show the general rusty-iron discoloration over the worked edges and surfaces. It is quite possible that some members may be of opinion that these are not worked at all. I can also show a few typical *flakes* [labelled M].

The series as a whole certainly has a marked individuality of its own, but this is nothing unusual. At a recent visit to the Blackmore Museum, it was pointed out to me that the specimens found at Bemerton, a few miles to the west of Salisbury, have a character of their own, different from those found at Milford Hill, a few miles to the east, and a practised eye can tell pretty certainly in which of these two localities any particular implement was found.

In a general way the Savernake type approaches more nearly to those found at Bemerton than to the Milford Hill specimens.

Another point to which I should like to draw attention is the peculiar polished or vitreous appearance shown by some of the implements. This appearance is often if not generally confined to a portion of the flint only, and is also seen in many flints from the pit which show no signs whatever of man's handiwork. Till recently this peculiarity has been explained as having been caused by the fact that the part affected was exposed to the influence of *blown sand*, from the analogy, I believe, of certain specimens, with a somewhat similar appearance, which have undoubtedly been exposed to sand blown about in the desert in Egypt and elsewhere.

This "blown sand" theory has never seemed to me a good one from the fact that most of the flints which have this glossy appearance still retain their dark or other natural colour on their polished surface, whereas, if they had been exposed to the atmosphere long enough to have become polished by the sand, the surface would certainly have been oxidized and shown the usual appearances of exposure; this is not the case.

A much better and more satisfactory explanation seems to be that offered by Dr. Roberts, of Cambridge, to whom some specimens were shown. He suggests that this polish or gloss is due to a thin film of silica deposited by water. As the gravel pit at Savernake is still damp, this film may well have been deposited by the action of water running or percolating through the bed. Dr. Roberts, I am informed, had noticed a similar appearance in America, where the Geyser Springs coat the neighbouring rocks with silica. Another deduction which Dr. Roberts made is one bearing on the age of the Knowle Farm flints, and is this, that unless deposited by water at a very high temperature, when I suppose the solubility of the silica is increased, such a gloss as some of these flints show would take a very long time to appear, and it certainly occurs in varying degrees. There is no ground for supposing that the temperature of the water percolating the Savernake gravel pits was ever raised to any great extent, therefore the time required for the deposition of the silica must have been very great,

We have already seen that other flints from the pit, which certainly have not been worked at all by man, show this peculiarity, as well as the worked stones, so that it seems certain that the result is accidental and in no way connected with the manufacture of the implements. So far as I know, and I have inquired into the subject, no bones have been discovered in the pit.

DISCUSSION.

Mr. A. M. BELL said that he had listened to the account of this important find with great interest, and regretted that he had not visited the spot to examine the character of the deposit and lie of the country. It was not clear to him whether the bed in which the implements lay was a true river deposit, or a drift of some other character. These were the two classes of implementiferous beds, and it was important to distinguish them. At Wolvercote, near Oxford, for example, there is a distinct river bed, containing a number of finely worked large implements, which are but little altered by patination. Adjoining it there is an older drift, also containing implements, all of which are ochreous. This distinction in the age of palæolithic flints had first, the speaker believed, been pointed out by Mr. W. G. Smith; it was confirmed by all his own observations and was in his opinion a generalization of high value. Consequently on seeing a new group his first question was "To which age do they belong? Are they early or late?" From his examination he considered that they had before them relics of a drift, which was itself found in the later or river valley period, to which the majority of flints shown probably belonged. There were also among them a few rolled and weather-beaten examples which he considered belonged to another, and an earlier stage. There were none, however, of the very rolled and stained examples placed by Mr. Smith as the earliest period. Such examples were rare; at Oxford he had found none; at Limsfield only one among hundreds of a later date.

To the statement of Mr. Willett (p. 310) that the nearest palæolithic find-spots were round Salisbury, he would add that a number of palæoliths have been recorded from Oxford and several adjoining localities; and also from Broadwell on the border of Gloucestershire, the latter being the most westerly station in the Thames Valley.

The speaker was much struck by the polish or glaze visible on many of the examples. He had never seen anything similar in implements from any locality, and he had seen collections from many places. He could not accept the explanation of Dr. Roberts, that it was due to a deposition of silica in solution. The condition which Dr. Roberts asked for as the cause of the phenomenon, rain-water perpetually running through sand, was common to every implementiferous deposit that he had ever seen. The result was peculiar and unique; he therefore could not attribute it to a cause which was at work in all cases. Nor could he think that the analogy of the Geyser Springs, referred to by Dr. Roberts, was a fortunate one. Silica, as is well known, is soluble in heated water containing an alkali. Both of these conditions are present in the water of the Geyser Springs, but, granting the alkali, for which there is no obvious cause, the presence of heated water in a surface deposit on the Wiltshire downs is incomprehensible.

The glaze might be natural or artificial. As it was usually, but not always partial, and not always on the same part of the tool, it seemed to him due to a natural cause. He knew none more likely than the cause rejected by the author the action of sand before the wind; he had seen a very high polish produced in this way on neolithic flints in the sand-heaths of Norfolk and also on the Aberdeenshire coast. At the same time he could not say that either these flints, or the well-known *drei-kanters*, or such flints as he had seen polished by the sand-blast of the Egyptian desert, had so high a polish as the examples before him. In two cases only had he seen a similar polish produced on stone by natural causes; the first was by glacial action, the second was by animals brushing against the side of a limestone cave. Neither of these causes were in this case applicable; ice would have polished away slight waves of fracture which were always retained—and he would gladly hear other attempts at solution of a very peculiar phenomenon.

Mr. STOPES said that it was clear to him that the polished surface was due to the friction of passing worms.

NOTE A.

After a subsequent visit to Savernake Mr. A. M. Bell writes further as follows:—"It is a most interesting find. The pit is in a hill-slope, but close to the great central watershed of south-west England; *i.e.*, in an *unwasted area*. Hence something *old* may be expected. In the pit are found (1) unrolled, fresh stones; (2) rolled and worn stones; (3) thickly patinated stones. The unrolled lie at the base; that is, there is probably a *floor* of palæolithic workmen. The rolled and patinated stones come from the central watershed, and may be much older than the first.

"The 'sand-blown' theory will not do for the 'glazing'; it is, I think, a *deposit* of silica."

NOTE B.

The long narrow implement on Plate XLIII is in the Pitt Rivers Museum, and is kindly lent for comparison by Mr. Balfour. It was found by Mr. J. Garstang at El Mehesna near Abydos in Egypt (reference number M. 2. S.), and is of pre-dynastic date. In Mr. Balfour's opinion the "glaze," which resembles very closely that on the Savernake stones, is due to the rubbing of gritty soil upon the implement which seems to have been used as a hoe.

NOTE C.

Mr. H. Wood-Hill, of St. Bartholomew's Hospital, has submitted to the Institute a memorandum on a chemical explanation of the "glazing" of the Savernake flints, which it has not been found possible to include in this volume of the *Journal*.

MAN

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CONTENTS.

ORIGINAL ARTICLES.

	No.
Ægean Script. On the Survival of Pre-Hellenic Signs in the Island of Kos. (<i>Illustrated.</i>) Dr. RUDOLF HERZOG	52
Africa: Algeria. <i>See</i> ALGERIA.	
Africa, East. A Carved Stool and other Objects from British East Africa. (<i>With Plate D.</i>) ALFRED SHARPE, C.B.	39
Africa, East. A Collection of Objects from the District to the South-west of Lake Nyassa. (<i>Illustrated.</i>) R. W. FELKIN, M.D., F.R.G.S.	112
Africa: Egypt. <i>See</i> EGYPT.	
Africa: Rhodesia. On the Khami Ruins, Rhodesia. FRANKLIN WHITE	82
Africa, South. <i>See</i> FOLKLORE; NATAL; TOTEMISM.	
Africa, South. Description of a Bushman Skull. (<i>Illustrated.</i>) J. BEDDOE, M.D., F.R.S.	58
Africa: Tripoli. Collateral Survival of Successive Styles of Art in North Africa. (<i>Illustrated.</i>) JOHN L. MYRES, M.A., F.S.A.	83
Africa: Tunis. A Piece of Early Masonry at Chaouach in Tunis. (<i>Illustrated.</i>) J. L. MYRES, M.A., F.S.A.	109
Africa, West. On Carved Doorposts from the West Coast of Africa. (<i>Illustrated.</i>) O. M. DALTON, M.A., F.S.A.	57
Algeria: Ethnography. On the "Libyan Notes" of Messrs. Randall-MacIver and Wilkin. JEAN CAPART	69
America. <i>See</i> CALIFORNIA.	
America: Ethnography. (1.) The Ethnographic Survey of Canada. (2.) Ethnological Studies of the Mainland Halkómëlem, a Division of the Salish of British Columbia CHAS. HILL-TOU	133
America: Iroquois. Dekanawideh; the Law-giver of the Caniengahakas. J. O. BRANT-SERO	134
Anthropometry. On an Improved Method of Measuring the Vertical Proportions of the Head. (<i>Illustrated.</i>) H. H. RISLEY, C.S.I.	144
Asia. <i>See</i> BURMA; CHINA; GEORGIA; INDIA; JAPAN; SIAM.	
Asia Minor: Religion. A Yezidi Rite. J. W. CROWFOOT, M.A.	122
Australia. A Swan-neck Boomerang of unusual form. (<i>With Plate C, 1-2.</i>) HENRY BALFOUR	27
Australia. Strangling-cords from the Murray River, Victoria, Australia. (<i>Illustrated.</i>) HENRY BALFOUR, M.A.	94
Australia. Three Bambu Trumpets from N. Territory, South Australia. (<i>With Plate C, 3-5.</i>) HENRY BALFOUR, M.A.	28
Australia. The Australian Ethnological Expedition. N. W. THOMAS, M.A.	67
Australia. The Australian Ethnological Expedition; part of a Letter received from Professor Baldwin Spencer. J. EDGE-PARTINGTON	143
Bibliography. Suggestions for an International Bibliography of Anthropology. N. W. THOMAS, M.A.	108
Biographical. <i>See</i> MAX MÜLLER; MORTILLET; PEEK.	
Brain. <i>See</i> PHYSICAL ANTHROPOLOGY.	
Buddhism. <i>See</i> JAPAN.	
Burma: Shan States. A Spear-head and Socketed Celt of Bronze from the Shan States. Burma. (<i>With Plate G.</i>) HENRY BALFOUR, M.A.	77
California. Note on a Specimen of Basket-work. (<i>Illustrated.</i>) O. M. DALTON, M.A., F.S.A.	17
China. Relics from Chinese Tombs. (<i>With Plate B.</i>) C. H. READ, F.S.A.	15
China. Relics from Chinese Tombs. (<i>See</i> MAN, 1901. 15.) Dr. S. W. BUSHELL, C.M.G. ...	54
Crete. Exploration at Zakro in Eastern Crete. D. G. HOGARTH, M.A.	147
Crete: Excavations Report on Excavations at Præsos in Eastern Crete. R. C. BOSANQUET	148
Crete: Prehistoric. Abstract of the Report of the Committee of the British Association on Explorations in Crete. J. L. M.	145
Crete. The Neolithic Settlement at Knossos and its Place in the History of Early Ægean Culture. (<i>Illustrated.</i>) A. J. EVANS, M.A., LL.D., F.R.S.	146

	No.
Egypt. An Egyptian Ebony Statuette of a Negress. (<i>With Plate I-J.</i>) W. M. FLINDERS PETRIE, LL.D., D.C.L. ...	107
Egypt. Egyptian Cutting-out Tools. (<i>Illustrated.</i>) W. M. FLINDERS PETRIE, LL.D., D.C.L.	123
Egypt: El Khargeh. (<i>With Plate H.</i>) Four Photographs from the Oasis of El Khargeh, with a Brief Description of the District. (<i>Illustrated.</i>) C. S. MYERS, M.A. ...	91
Egypt: Prehistoric. A Prehistoric Cemetery at El Amrah in Egypt. (<i>Illustrated.</i>) D. RANDALL-MACIVER, M.A. ...	40
Egypt. The Bones of Hen Nekht, an Egyptian King of the Third Dynasty. (<i>Illustrated.</i>) C. S. MYERS, M.A. ...	127
England. See KENT; STONEHENGE.	
England: Skull. Notes on a Human Skull found in Peat in the Bed of the River Orwell, Ipswich. NINA LAYARD ...	125
Europe. See ÆGEAN; CRETE; ENGLAND; GREECE; IRELAND; ITALY; NORWAY; SCOTLAND.	
Folklore. See ASIA MINOR; GEORGIA; PALMISTRY; RELIGION; TOTEMISM.	
Folklore: Africa. On some Problems of Early Religion, in the light of South African Folklore. E. S. HARTLAND ...	21
Folklore: Ireland. On certain Wells in Ireland. Prof. J. RHYS, II. E. S. HARTLAND ...	19
Forgeries. See NEW ZEALAND, 92; PACIFIC, 56, 98.	
Georgia: Folklore. Animal Folklore in Georgia. (<i>Illustrated.</i>) N. W. THOMAS, M.A. ...	42
Greece. See ÆGEAN; CRETE.	
Greece: Prehistoric. Note on Mycenaean Chronology. JOHN L. MYRES, M.A., F.S.A. ...	139
Greece: Prehistoric. Pre-Mycenaean Athens. (<i>Illustrated.</i>) JOHN L. MYRES, M.A., F.S.A.	70
Greece: Prehistoric. "The Oldest Civilisation of Greece: Mr. Hall and 'H.'" A. J. EVANS, M.A., LL.D., F.R.S. ...	138
Guilloche Ornament on an Etruscan Potsherd. HENRY BALFOUR, M.A. ...	4
India. Ethnographic Survey of India in connection with the Census of 1901. GOVERNMENT OF INDIA ...	113
India: Madras. The Dômbis of Jeypur, Vizagapatam District, Madras. (<i>Illustrated.</i>) F. FAWCETT ...	29
Japan: Buddhism. On a Wheel of Life from Japan. (<i>With Plate A.</i>) N. W. THOMAS, M.A.	1
Kent: Flint Implements. The Occurrence in a very Limited Area of the Rudest with the Finer Forms of Worked Stones. (<i>With Plate F.</i>) W. M. NEWTON ...	66
Linguistics. Men's Language and Women's Language. J. G. FRAZER, M.A., Litt.D. ...	129
Malay Peninsula. Notes on the Ethnography of the Malay Peninsula. (<i>Illustrated.</i>) (<i>With Plate M.</i>) W. W. SKEAT, M.A. ...	142
Malta: Prehistoric. Prehistoric Pottery in the Valletta Museum in Malta. (<i>Illustrated.</i>) J. L. MYRES, M.A., F.S.A. ...	71
Max Müller. (<i>With Portrait.</i>) Prof. A. A. MACDONELL, M.A. ...	16
Mortillet. The Proposed Monument to Gabriel de Mortillet. LOUIS GIRAUX ...	114
Natal. Native Smoking Pipes from Natal. HENRY BALFOUR, M.A. ...	10
New Guinea. A Papuan Bow-and-Arrow Fleam. (<i>With Plate K.</i>) A. C. HADDON, Sc.D., F.R.S. ...	121
New Hebrides. Feathered Arrows from Espiritu Santo, New Hebrides. J. EDGE-PARTINGTON	32
New Hebrides. Memorial Heads in the Pitt-Rivers Museum. (<i>With Plate E.</i>) HENRY BALFOUR, M.A. ...	51
New Zealand: Forgeries. Forgeries of New Zealand Stone Implements. J. EDGE-PARTINGTON ...	92
New Zealand. On the Origin of the Maori Scroll Design. A. C. HADDON, Sc.D., F.R.S. ...	55
New Zealand. The Matuatonga in the Art Gallery, Auckland, New Zealand. (<i>Illustrated.</i>) J. EDGE-PARTINGTON ...	30
Nomenclature: Glaze or Varnish. Note on the Use of the Words "Glaze" and "Varnish" in the Description of Painted Pottery. JOHN L. MYRES, M.A., F.S.A. (<i>see also</i> 95)	78
Norway: Folklore. A Modern Trace of Sun-Worship in Norway. W. W. SKEAT, M.A. ...	79
Ornament. See GUILLOCHE; NEW ZEALAND, 55.	
Pacific. An Object of Unknown Use and Locality. J. EDGE-PARTINGTON ...	80
Pacific: Forgeries. Note on the Occurrence of Forgeries in the Pacific. H. LING ROTH ...	93
Pacific. Note on Forged Ethnographical Specimens from the Pacific Islands. J. EDGE-PARTINGTON ...	56
Pacific. Note on Tatu-patterns employed in Lord Howe's Island. (<i>Illustrated.</i>) C. M. WOODFORD ...	31
Pacific. On the Stone Figures from Easter Island. J. EDGE-PARTINGTON ...	7
Pacific: Solomon Islands. Native Ornaments from the Solomon Islands, recently presented to the British Museum by Mr. C. M. Woodford. (<i>Illustrated.</i>) J. EDGE-PARTINGTON ...	81

	No.
Pacific: Tonga. A Stone Celt from Tonga. (<i>Illustrated.</i>) BASIL THOMSON	110
Palmistry. The Anatomy of Palmistry. ARTHUR KEITH, M.D.	20
Peek, Sir C. E. F. W. RUDLER	96
Physical Anthropology. See ANTHROPOMETRY; EGYPT, 127; ENGLAND; INDIA, 29; SCOTLAND.	
Physical Anthropology: Brain. On the Temporary Fissures of the Human Cerebral Hemisphere, with Observations on the Development of the Hippocampal Fissure and Hippocampal Formation. J. SYMINGTON, M.D.	126
Race Improvement. The Possible Improvement of the Human Breed under the existing Conditions of Law and Sentiment. (<i>With Plate L.</i>) FRANCIS GALTON, D.C.L., D.Sc., F.R.S.	132
Religion. Note on the Acts of St. Dasius. FRANZ CUMONT	53
Religion. The Martyrdom of St. Dasius. A. LANG, M.A.	68
Scotland: Pigmentation. The Frequency and Pigmentation Value of Surnames of School Children in East Aberdeenshire. J. F. TOCHER, F.I.C., and J. GRAY, B.Sc.	128
Siam: Celadon Ware. The Place of Manufacture of Celadon Ware. (<i>Illustrated.</i>) T. H. LYLE	41
Spiritualism. Anthropology and Superstition. ANDREW LANG, M.A.	135
Stonehenge. On the Damage recently sustained by Stonehenge. (<i>Illustrated.</i>) A. L. LEWIS.	18
Torres Strait. On the Functions of the Maternal Uncle in Torres Strait. W. H. R. RIVERS, M.D.	136
Torres Strait. On the Functions of the Son-in-Law and Brother-in-Law in Torres Strait. W. H. R. RIVERS, M.D.	137
Torres Strait: Pottery. Correction. A. C. HADDON, Sc.D., F.R.S.	95
Totemism. Notes on Two Letters published in the <i>Times</i> of September the 3rd and 7th, 1901. A. C. HADDON, Sc.D., F.R.S.	124
Totemism. South African Totemism. J. G. FRAZER, Litt.D., D.C.L.	111

REVIEWS.

Africa: Algeria. Randall-MacIver and Wilkin. <i>Libyan Notes: Wilkin. Among the Berbers of Algeria:</i> J. L. M.	62
Africa: Ashanti. Freeman. <i>Travels and Life in Ashanti and Jaman.</i> R. W. F.	101
Africa: Congo. See CONGO.	
Africa: Masai. Hinde. <i>The Masai Language.</i> R. N. CUST	73
Africa: Morocco. See MOROCCO.	
Africa: Negro. See AMERICAN NEGRO.	
Africa: Nigeria. See NIGERIA.	
Africa: Soudan. Chantre. <i>Les Bicharieh et les Ababdeh.</i> A. H. KEANE	74
Africa, South. Native Races Committee. <i>The Natives of South Africa; their Economic and Social Condition.</i> E. S. HARTLAND	72
Africa: West. See WEST AFRICA.	
American Negro. Du Bois: <i>The Philadelphia Negro.</i> Eaton: <i>Report on Domestic Service</i>	14
America. Dellenbaugh. <i>The North Americans of Yesterday: A Comparative Study of North American Indian Life, Customs, and Products, on the Theory of the Ethnic Unity of the Race.</i> N. W. T.	97
America. See NORTH AMERICA; ONTARIO.	
Anthropology. Schurtz. <i>Urgeschichte der Kultur.</i> N. W. T.	102
Arabia. Bent. <i>Southern Arabia.</i> H.	23
Archæology. See AFRICA (ALGERIA); ARYAN RACE; CRETE; EGYPT; FRANCE; GREECE; MESOPOTAMIA; ONTARIO; SCHLESWIG HOLSTEIN.	
Aryan Race. Penka. <i>Die Ethnologisch-ethnographische Bedeutung der Megalithischen Grabbauten.</i> J. L. M.	88
Asia. See ARABIA; ASSAM; BURMA; INDIA; MESOPOTAMIA; SIAM.	
Asia. Futterer. <i>Durch Asien (I. Geogr. Charakter-Bilder).</i> A. H. KEANE	34
Assam. See LANGUAGE.	
Australia, &c. Verschuur. <i>At the Antipodes.</i> J. L. M.	60
Biography: Huxley. P. Chalmers Mitchell, M.A. <i>Thomas Henry Huxley.</i> G. B. H.	63
Brunswick: Folklore. Andree. <i>Braunschweiger Volkskunde.</i> N. W. T.	115
Burma: Upper. See UPPER BURMA.	
Burmo-Chinese Frontier. Government Reports on the Chin Hills, &c., 1899-1900. W.	13
Colour Vision. Bosse and Holden. <i>The Order of Development of Colour Perception and of Colour Preference in the Child.</i> Rivers; <i>Primitive Colour Vision. The Colour Vision of the Eskimo.</i> W. H. R. RIVERS, M.D.	87
Congo. Schmeltz. <i>Album of the Ethnography of the Congo Basin.</i> C. H. READ, F.S.A.	116

	No.
Consanguinity. Davies. <i>Consanguinity as a Factor in the Aetiology of Tuberculosis.</i> A. K. ...	8
Crete. Evans and Hogarth. <i>The Cretan Exploration Fund.</i> J. L. M. ...	2
Egypt. Niebuhr. <i>The Tell-el-Amarna Period.</i> H. H. ...	141
Egypt. Sethe. <i>Sesostris.</i> A. H. GARDINER ...	24
Egypt. Steindorff. <i>Grabfundes des Mittleren Reichs in den Koeniglichen Museen zu Berlin.</i> F. L. L. GRIFFITH ...	61
Europe. See ARYAN RACE; BRUNSWICK; CRETE; FOLKLORE; FRANCE; GREAT BRITAIN; GREECE; RELIGION; SAVOY; SCHLESWIG HOLSTEIN; SWEDEN; WALES.	
Folklore: Animal Superstitions. Thomas. <i>O mercado de grillos</i> ...	5
Folklore: Brunswick. See BRUNSWICK.	
Folklore: England. Gomme. <i>Old English Singing Games.</i> N. W. T. ...	48
Folklore: Sébillot. <i>Le Folklore des Pêcheurs.</i> N. W. T. ...	140
Folklore: Scotland. Campbell. <i>Superstitions of the Highlands and Islands of Scotland; collected entirely from Oral Sources.</i> N. W. T. ...	104
Folklore: Wales. Rhys. <i>Celtic Folklore: Welsh and Manx.</i> F. Y. P. ...	4
Folklore. Various Authors. <i>Popular Studies in Mythology, Romance, and Folklore</i> ...	64
France. Girod and Massénat. <i>Les Stations de l'Age du Renne dans les Vallées de la Vézère et de la Corrèze.</i> F. W. RUDLER ...	37
Great Britain. Macnamara. <i>Origin and Character of the British People.</i> C. H. R. ...	151
Greece. Hall. <i>The Oldest Civilisation of Greece; Studies of the Mycenaean Age.</i> H. ...	130
Greece. See RELIGION.	
India. Campbell. <i>Index-Catalogue of Indian Official Publications in the Library of the British Museum.</i> SIR T. H. HOLDICH, K.C.I.E., C.B. ...	35
India. Waddell. <i>Among the Himalayas.</i> T. H. H. ...	49
Language: Assam. Hamilton. <i>An Outline Grammar of the Dafia Language as spoken by the Tribes immediately South of the Apa Tanung Country.</i> W. CROOKE ...	46
Language: General. Sweet. <i>The History of Language.</i> S. H. RAY ...	50
Language. See AFRICA (MASAI); MOROCCO.	
Left-handedness. Lueddeckens. <i>Rechts- und Linkshändigkeit.</i> R. W. F. ...	84
Melanesia. Foy. <i>Tanz-objecte vom Bismarck-Archipel, Nissau, und Buka.</i> A. C. HADDON ...	47
Mesopotamia. Thompson. <i>The Reports of the Magicians, &c. of Nineveh and Babylon.</i> N. W. T. ...	9
Mesopotamia. Sayce. <i>Babylonians and Assyrians, Life and Customs.</i> N. W. T. ...	25
Morocco: Language. Stumme. <i>Handbuch des Schilhischen von Tuzerwalt.</i> J. L. M. ...	45
New Guinea. <i>Despatches from H.E. the Lieut.-Governor of British New Guinea.</i> S. H. RAY ...	36
New Guinea. Meyer and Parkinson. <i>Papua-Album II.</i> J. EDGE-PARTINGTON ...	117
New Zealand. Reeves. <i>The Long White Cloud.</i> J. E.-P. ...	98
Nigeria. Robinson. <i>Our Latest Protectorate.</i> C. F. H.-B. ...	6
North America: Folklore. Fletcher. <i>Indian Story and Song from North America.</i> E. S. HARTLAND ...	118
Ontario. Boyle. <i>Archaeological Reports, 1898-9.</i> E. SIDNEY HARTLAND ...	33
Pacific. Brigham. <i>An Index to the Islands of the Pacific Ocean.</i> O. M. D. ...	103
Pacific: Nomenclature. Von Luschan. <i>Vorschläge zur Geographischen Nomenklatur der Südsee.</i> O. M. DALTON, M.A., F.S.A. ...	119
Pacific. See MELANESIA; NEW ZEALAND; PHILIPPINES.	
Philippines. Kietze. <i>Crania Ethnica Philippinica.</i> Sir W. TURNER, M.D., F.R.S. ...	149
Religion. Andrew Lang. <i>The Making of Religion.</i> R. S. H. ...	3
Religion. Forlong. <i>Short Studies in the Science of Comparative Religions.</i> E. W. B. ...	26
Religion. Frazer. <i>The Golden Bough: A Study in Magic and Religion.</i> E. SIDNEY HARTLAND ...	43
Religion: Greece. de Visser. <i>De Græcorum Diis non referentibus speciem humanam.</i> L. R. FARNELL ...	86
Savoy. Pittard. <i>Note Préliminaire sur l'Ethnologie de la Savoie et de la Haute-Savoie.</i> F. C. S. ...	38
Schleswig-Holstein: Bronze Age. Splieth. <i>Inventar der Bronze-alter Funde aus Schleswig-Holstein.</i> J. L. M. ...	85
Siam. James McCarthy. <i>Surveying and Exploring in Siam.</i> H. W. S. ...	12
Siam. Young. <i>The Kingdom of the Yellow Robe: Being Sketches of the Domestic and Religious Rites and Ceremonies of the Siamese.</i> H. W. S. ...	99
Sweden: Physical Anthropology. Gustaf Retzius. <i>Crania Suecica Antiqua.</i> J. BEDDOE, M.D., F.R.S. ...	59
Trepanning. Pittard. <i>Sur une Trépanation préhistorique de l'Age du Bronze...</i> ...	65
Upper Burma. Scott and Hardiman. <i>Gazetteer of Upper Burma and the Shan States.</i> SIR T. H. HOLDICH, K.C.I.E., C.B. ...	150
Wales. Rhys and Brynmor Jones. <i>The Welsh People.</i> J. BEDDOE, M.D., F.R.S. ...	22
West Africa. Kingsley. <i>West African Studies.</i> L. T. S. ...	100

DESCRIPTION OF THE PLATES.

A. Buddhist Wheel of Life from Japan	...	With No. 1
B. Bowl, Vase, and Mirror, from a Mediaeval Chinese Tomb in the British Museum	...	15
C. Australian Objects in the Pitt Rivers Museum—1-2. Swan-necked Boomerangs:		
3-5. Bambu Trumpets	...	27-8
D. Carved Wooden Stool from British East Africa	...	39
E. Memorial Heads from the New Hebrides, in the Pitt Rivers Museum	...	51
F. Palaeolithic Implements from a High Terrace Pleistocene River Bed near Green-		
hithe...	...	66
G. Spear-head and Socketed Celt of Bronze from the Shan States, Burma: in the		
Pitt Rivers Museum	...	77
H. Temple of Hibis. Oasis of El Khargeh, Egypt	...	91
I-J. Egyptian Ebony Statuette of a Negress	...	107
K. Papuan Bow-and-Arrow Fleam	...	121
L. Standard Scheme of Descent	...	132
M. Malay Spinning and Weaving	...	142

ILLUSTRATIONS IN THE TEXT.

N.B.—All are Photographs, except where otherwise described.

Guilloche Ornament on an Etruscan Potsherd: Pitt Rivers Museum. (<i>Photograph.</i>)	...	With No. 4
Native Tobacco Pipes from Natal: Pitt Rivers Museum. (<i>Four examples.</i>)	...	10
Friedrich Max Müller	...	16
Basket Work from California: British Museum	...	17
Stonehenge Plan. (<i>Sketch.</i>)	...	18
Stonehenge: View from West, showing the Stones which fell in 1797 and 1900	...	18
Tatu Marks of the Dômbas of Madras. (<i>Twelve examples: sketch.</i>)	...	29
Matuatonga in the Art Gallery, Auckland, New Zealand. (<i>Three views.</i>)	...	30
Tatu Marks employed in Lord Howe's Island	...	31
Prehistoric Cemetery at El Amrah in Egypt: (1) Clay Model of a House; (2) Clay		
Model of Kine; (3) Stone Celt; (4-6) Stone Mace Heads; (7-11) Forked Hunting		
Lances of Flint; (12) Dagger of Copper; (13-14) Baskets; (15-16) Clay Dolls;		
(17) Hieroglyph (<i>Drawing</i>)	...	40
Celadon Ware from an Ancient Pottery Site in Siam	...	41
Animal Skull, and Wooden Cross with Crown of Thorns used as Charms to protect		
Gardens in Georgia. (<i>Sketches.</i>)	...	42
Pre-Hellenic Signs in the Island of Kos. (<i>Sketch.</i>)	...	52
Carved Door-posts from the West Coast of Africa	...	57
Skull of a Bushman. (<i>Side, top, and face: sketches.</i>)	...	58
Pre-Mycenæan Layer on the South Side of the Acropolis of Athens	...	70
Prehistoric Pottery in the Valletta Museum in Malta	...	71
Object of unknown use and locality, obtained at Rotumah	...	80
Native Ornaments from the Solomon Islands	...	81
Shell Money from New Georgia	...	81
Native-made Pots for Sale at Khoms (Lebda) in Tripoli	...	83
Tomb, probably Nestorian, in the Oasis of El Khargeh, Egypt	...	91
Native Street in Khargeh	...	91
Strangling Cord from the Murray River, Victoria, Australia	...	94
Piece of Early Masonry at Chaouach in Tunis	...	109
Stone Celt from Tonga. (<i>Two views.</i>)	...	110
Objects from the District to the South-west of Lake Nyanza: (1) Scraper and Dagger;		
(2-3) Dagger and Beer Ladle; (4) Iron Fighting-Axe; (5) Iron Spear	...	112
Egyptian Cutting-out Tools	...	123
Skull of Hen Nekht, an Egyptian King of the Third Dynasty. (<i>Side, back, front, top.</i>)	...	127
Malay Native House	...	142
Malay Weavers at Work. (<i>cf. Plate M.</i>)	...	142
Improved Method of Measuring the Vertical Proportions of the Head	...	144
Neolithic and Early Metal Age: Figures in Clay and Marble from Knossos and Amorgos.		
(<i>14 sketches.</i>)	...	146

LIST OF AUTHORS.

N.B.—The Numbers to which an asterisk is added are those of Reviews of Books.

- BALFOUR, H., 4, 10, 27, 28, 51, 77, 94.
 BEDDOE, JOHN, 22*, 58, 59*.
 BOSANQUET, R. C., 148.
 BRABROOK, E. W., 14*, 26*.
 BRANT-SERO, J. O., 134.
 BUSHELL, S. W., 54.
 CAPART, JEAN, 69.
 CROOKE, W., 13*.
 CROWFOOT, J. W., 122.
 CUMONT, FRANZ, 53.
 CUST, R. N., 73*.
 DALTON, O. M., 17, 57, 103*, 119.
 EDGE-PARTINGTON, J., 7, 20, 32, 56, 80,
 81, 92, 98*, 117*, 143.
 EVANS, A. J., 138, 146.
 FARNELL, L. R., 86*.
 FAWCETT, F., 29.
 FELKIN, R. W., 84*, 101*, 112.
 FRAZER, J. G., 111, 129.
 GALTON, F., 132.
 GARDINER, A. H., 24*.
 GIRAU, LOUIS, 114.
 GOVERNMENT OF INDIA, 113.
 GRAY, J., 128.
 GRIFFITH, F. LL., 61*.
 H., 23*, 130*.
 H.-B., C. F., 6.
 H., H., 141*.
 H., G. B., 63.
 HADDON, A. C., 55, 95, 121, 124.
 HARTLAND, E. S., 3*, 19, 21, 33*, 72*,
 118*.
 HERZOG, R., 52.
 HILL TOUT, C., 133.
 HOGARTH, D. G., 147.
 HOLDICH, Sir T. H., 35*, 150.
 J., 5.
 KEANE, A. H., 34*, 74*.
 KEITH, A., 8*, 20.
 LANG, A., 68, 135.
 LAYARD, N., 125.
 LEWIS, A. L., 18.
 LING ROTH, H., 93.
 LYLE, T. H., 41.
 MACDONELL, A. A., 16.
 MYERS, C. S., 91, 127.
 MYRES, J. L., 2*, 60*, 62*, 70, 71, 78,
 83, 85*, 88*, 109, 139, 145.
 NEWTON, W. M., 66.
 PETRIE, W. M. F., 107, 123.
 RANDALL-MACIVER, D., 40.
 RAY, S. H., 36*.
 READ, C. H., 15, 116*, 151.
 RHËS, J., 11.
 RIVERS, W. H. R., 87,* 136, 137.
 RISLEY, H. H., 144.
 RUDLER, F. W., 37*, 96.
 S., F. C., 38*, 65*.
 S., L. T., 100.
 S., H. W., 12*, 99*.
 SHARPE, ALFRED, 39.
 SKEAT, W. W., 79, 142.
 SPENCER, BALDWIN, *cf.* 143.
 SYMINGTON, J., 126.
 THOMAS, N. W., 1, 9*, 25*, 42, 64*,
 67, 97*, 102*, 104*, 108, 115*, 140.
 THOMSON, BASIL, 110.
 TÔCHER, J. F., 128.
 TURNER, Sir W., 149.
 WHITE, FRANKLIN, 82.
 WOODFORD, C. M., 31, *cf.* 81.

MAN

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Reviews of published works are distinguished by an asterisk *, and the author's name in the catch title is that of the writer of the work under review.

All communications printed in "Man" are signed or initialled by their authors, and the Council of the Institute desires it to be understood that in giving publicity to them it accepts no responsibility for the opinions or statements expressed.

Japan: Buddhism.

With Plate A.

N. W. Thomas.

On a Pictorial Representation of the Wheel of Life from Japan. Communi-
cated by N. W. Thomas.

1

The Wheel of Life, the pictorial representation of some of the main ideas of Buddhist philosophy, is said to have been drawn by Buddha himself with rice grains, but, of course, without pictorial detail; these, however, though first introduced many centuries later, are said to have been based on the imagery of Buddha. The Wheel of Life, in spite of its antiquity, was discovered only quite recently, two examples having been found, one in Thibet, and portions of another in Central India, during the last few years. The present example is of Sino-Japanese origin, and though the print goes back no further than 1850, the picture itself is evidently far older; it differs in many respects from the two wheels already mentioned, and is evidently uninfluenced by them.

It will be convenient, before proceeding further, to give a translation of the various titles and the long text below the picture. For these I am indebted to the kindness of Mr. T. Watters, whose commentary on the picture has been invaluable to me. The general title is "The Wheel of Life and Death in the Five Resorts (Ways of Life)." Below this comes a white circle, "The Perfect Stillness of Nirvāna." Over the figure is the title "The Great Demon of Impermanency," on either side of which are verses in which sense is sacrificed to sound, as is frequently the case. The long passage below the picture is to this effect:—In the thirty-fourth chapter of the *Sarvāstivādin Vinaya* it is recorded—Ananda, addressing Buddha, told him that the venerable Moginlin, having made a tour of the Five Resorts (the Chinese original means "to hasten joyfully," &c., but in the Buddhist books it is used in the sense of "going to"; Five Resorts is a translation of the Sanscrit *Pañchagaṇḍaka*, to which *Samśāra* is sometimes added) and seen their sorrows, was explaining these to his congregation, and hence the large meeting.

Buddha then explained to Ananda that a case like this was rare of a person being able to visit other spheres of existence and describe them to his fellow-creatures. For this reason, he adds, he gives instructions that *bhikshus* (brethren) at the porter's lodge of a monastery should paint a Wheel of Life and Death. As the brethren did not know how to proceed, Buddha explained :—"Make of appropriate size the figure of a wheel, in this make a nave and five spokes to represent the Five Resorts ; under the nave paint Hell, and on one side of it Animals, and on the other side Hungry Demons (Ghosts) ; above these paint Men and *Devas*. In the Men's Resort make the Four Continents, viz. :—*Videha* in the east, *Jambu* in the south, *Godhani* in the west, and *Kuru* in the north. In the nave make a white circle with a picture of Buddha ; in front of the picture paint a pigeon to typify evil craving, a snake to typify malicious temper, and a pig to typify stupidity. On the tire (or rim) make a circle of water-buckets, with creatures living and dead in the buckets, the living with the head out, and the dead with the feet out. All round the Five Resorts paint illustrations of the Twelve Members of the Circle of Causation, viz. :—

- "(1.) Ignorance : paint a *rakshasa* (demon).
- "(2.) The elements (or Action) : an earthen wheel. (The Chinese word is *hsing*, "which means, 'going, action, &c.,' but it is here, perhaps, used in the sense 'elemental matter.'—T. W. [May not a potter's wheel be intended, typifying 'shaping,' as in Waddell.—N. W. T.]).
- "(3.) Discrimination [? Consciousness.—N. W. T.] : a monkey.
- "(4.) Name-colour [? Name-form.—N. W. T.] : a man on a boat.
- "(5.) The six places : the six 'roots,' the six senses.
- "(6.) Touch : a man and woman in contact.
- "(7.) Sensation (lit. receipts) : a man and woman in pain and pleasure. [The "third figure is apparently put in by the artist ; what is represented "is not very clear.—N. W. T.]
- "(8.) Affection : a woman with twin boys or girls in her arms.
- "(9.) Taking : a man drawing water in a pitcher. [The pitcher looks much "more like a teapot.—N. W. T.]
- "(10.) Existence : the god *Brahmā*.
- "(11.)—(a.) Birth : a pregnant woman.
- "(b.) Old age : a man and woman, very old.
- "(c.) Sickness : a man and woman in sickness.
- "(12.)—(a.) Death : a funeral.
- "(b.) Trouble : a man and woman in trouble.
- "(c.) Sorrow : a man and woman weeping.
- "(d.) Pain : a man and woman suffering pain.
- "(e.) Mental trouble : a man and woman having difficulty in keeping "an elephant [? camel] in hand.

"Above the wheel make the Great Demon of Impermanency, with matted hair, long mouth, and arms extended to hold the Wheel of Life and Death. On one side of the Demon's head put this *gathā*—Seek release, be zealously improving in Buddhism, subdue the army of life and death as an elephant crushes a straw shed. And on the other side, this *gathā*—Be ever assiduous in this *dharma* and *vinaya*, and you will be able to drain the sea of trouble and get beyond the farthest limit of pain.

"Immediately above the Demon, make a white circle to typify the perfect stillness (or solitariness, lit. cleanness) of *Nirvāna*." (The word rendered "stillness" commonly means "clean, pure," but is here evidently used in its other sense of "lonely.")

The *bhikshus* acted according to instructions, and had the Wheel of Life and Death painted on the porter's lodges at the monasteries. Then pious Brahmins and others seeing the picture, asked the *bhikshus* to explain the meaning, but the *bhikshus* were

unable to do so. When this was reported to Buddha, he ordered that a Brother should be deputed by the monastery to take his seat at the porter's lodge and explain the picture to passers-by. The *bhikshus* were careless, and appointed ignorant Brethren, and then Buddha ordained that intelligent Brethren, who could explain the picture, should always be appointed. So far the text; the appendix by the Japanese who reproduces the picture, and circulates it for the good of others, is a story of good resulting from the picture, and is quoted from a Chinese Buddhist Cyclopædia.

The whole passage is a somewhat inaccurate transcription from the 34th *chuan* of the *Sarvāstivādin Vinaya*, and is in general agreement with the *Divyāvadāna*, the last not enumerating the *Nidānas*.

The picture is in many of its features Chinese; the figures in the *nidānas* and the Resort of Man are distinctly Chinese in character. On the other hand, some of the details of *Svarga* (the Resort of the Gods), seem to be of Japanese type. It is curious to note that the demon, so far as his head goes, approximates closely to the mediæval devil; his three-clawed feet are Japanese.

On the rim of the wheel the buckets can hardly be said to form a chain, but they are intended, perhaps, to typify the passage from one Resort to another; nor do they contain creatures; in the buckets are human beings only. The representation in the picture agrees rather with the directions of the *Divyāvadāna* than with the text below.

The most remarkable feature of the picture is that Buddha, instead of being outside the circle of *Saṃsāra*, is placed in the nave with the symbols of the passions, though in a different circle. In this the artist is simply following directions. The representation of tantalised ghosts also departs considerably from the conventional ideas; this is apparently due to ignorance; the ghosts should have large stomachs, mouths the size of a pinhole, and throats the size of a hair, instead of being emaciated human beings.

The details of Hell, as of all the other Resorts, are far simpler in the Japanese picture than in the Thibetan. On the left is a mirror, which reflects the sins of the person before it; in the centre are two persons being punished, one by having his tongue torn out, the other by the *hang*. On the right there is a figure who is being transfixed, and another either waiting for this punishment or suffering starvation. At the head of the picture is Yama, God of the dead, and his attendants. Of course, the direction in the text to put Hell at the bottom is meaningless; the wheel is regarded as being in perpetual revolution; the wording of the direction seems to show that it was written by someone who was familiar with pictorial representations of the wheel, otherwise only directions as to the order of the Resorts would be given.

These *Nidānas* or "Causes of Existence" were, so long as we had only a Sanscrit text to help us, one of the darkest portions of Buddhistic philosophy. Being, as they are, a fundamental point of the whole system, their correct interpretation is necessarily of the highest importance. The idea which lies at the bottom is in many respects the same as that which forms the basis of Schopenhauer's system of philosophy. When the *Nidānas* form a chain they may be interpreted as successive stages of development of the Will; first the unconscious Will, then matter, then consciousness, self-consciousness, the perception of the external world, and so on. The question of how far the *Nidānas* of the Japanese picture can be so interpreted must be left for future discussion. It is impossible to enter here into the question raised by the pictorial representations of them. It may be of interest to note, however, that they are not looked on as a regular *catena*, but rather as "members" (*aṅga*) or "branches." With few exceptions, both the pictures and the names differ from those found in Thibet. In No. 10, where Waddell has "Fuller Life" we have "Existence," represented by the God *Brahmā*; the picture shows a three-headed figure; on the head is a smaller figure like those found in the representations of *Avalokita*, where it is meant for his spiritual

father, Amitābha Buddha. The final figure in the series, the camel, which according to the text should have been an elephant, is perhaps the same as Waddell's blind she-camel; it does not, however, typify *Avidyā* (Ignorance), for which a demon stands in the Japanese picture. There are many interesting points raised by the picture; it may be possible to ascertain approximately the date of its composition.

The Resort of the Gods seems to embody early Japanese ideas. These questions of art criticism, however, as well as those deeper philosophical ones raised by the *Nidānas*, must be reserved for future discussion.

N. W. THOMAS.

Crete.

Evans & Hogarth.

The Cretan Exploration Fund: an Abstract of the Preliminary Report of the First Season's Excavations. Communicated by the Secretary of the Fund.

2

The new conditions in which Crete is placed, and the final emancipation of the island from Turkish rule, have, at last, rendered it possible to organise a serious effort to recover the evidences of her early civilisation.

How important are the results which a thoroughgoing investigation in this field holds out to archaeological science may be gathered from what has already been brought to light in far less favourable circumstances. The path of Cretan exploration was opened out by the English travellers Pashley and Spratt. Their exploratory labours have been followed, in more recent years, by the striking discoveries of Halbherr and Fabricius. The great inscription containing the early laws of Gortyna stands alone as a monument of Greek civic legislation. The bronzes of the Idaean Cave have afforded a unique revelation of the beginnings of classical Greek art. Further researches, to which English investigation has once more contributed, have brought into relief the important part played by the still earlier civilisation of Mycenæ, the wide diffusion of its remains, and even the existence in the island of an indigenous system of sign-writing anterior to the use of the Phœnician alphabet. Additional indications, indeed, have come to light which carry back the chronology of the earlier relics of Cretan culture far beyond the date of Schliemann's great discoveries on the mainland of Greece, and attest an intercourse with Egypt going back to the third and, it may be, even the fourth millennium before our era. We have here in Crete the first stepping-stone of European civilisation.

The better to solve the many interesting problems thus opened up it was decided in the summer of 1899 to form a "Cretan Exploration Fund," under the direction of Mr. Arthur J. Evans, M.A., F.S.A., Keeper of the Ashmolean Museum at Oxford, and Mr. D. G. Hogarth, M.A., F.S.A., F.R.G.S., Fellow of Magdalen College, and at that time Director of the British School of Archaeology in Athens, in order to carry out a series of comprehensive excavations in co operation with the British School. His Royal Highness Prince George of Greece, High Commissioner of the Powers in Crete, graciously consented to become patron of the Fund, and through his good offices it has been possible to secure for British enterprise a series of sites selected for their historic importance or specially representative character. At Knossos—the city of Minos and the Labyrinth, of Dædalos and the "Choros" of Ariadnê, the traditional centre of the ancient sea-power of Crete and its earliest school of art—one of the first objects inviting excavation was a mound containing the ruins of a pre-historic building, the exploration of which had been already one of Schliemann's ambitions, and was the objective of the first season's work of the Fund. At Præsos, another site is reserved, on which it is hoped to lay bare the chief stronghold of the original Eteocretan race, where an archaic inscription in an indigenous and still undeciphered dialect has already been discovered. Lyttos, which is also included in the scheme, was regarded as the model Dorian City, and the fragments of its ancient laws that have come to light on its acropolis give

hopes of considerable epigraphic results. The great cave of Psychro on Mt. Dikta has already yielded, also in the first season's work, results not inferior in interest and scientific importance to those obtained from the cave sanctuary on Mt. Ida; and the investigation of some prehistoric sites on the south-eastern coast of Crete, also included in the present plan, is expected to throw a valuable light on the early intercourse with Egypt.

But the pre-occupation of the public mind caused by the war in South Africa made it impossible last year to press the claims of Cretan exploration, and of the £5,000 required for the adequate realisation of the scheme, barely a tenth part was collected by private subscriptions. Meanwhile, Italian and French Missions, supported by Government aid, had already been in the field for several months. Even to hold their own it was absolutely imperative that British representatives should make a beginning, and the Directors of the Cretan Exploration Fund had no choice but to embark last spring on an enterprise which, once begun, for the honour of British science must be carried through.

The sum of about £500 that had been privately collected was devoted to the furtherance of two separate enterprises. Half of the amount went to assist Mr. Arthur Evans in the excavation of a site already acquired by him at Kephala on the site of Knossos, which proved to contain the remains of a prehistoric palace. The other half of the sum collected was allocated to Mr. D. G. Hogarth, the Director of the British School at Athens, for the exploration of the prehistoric town and tombs of Knossos and of the great Cave of Zeus on Mount Dikta.

The following paragraphs from the statement and appeal recently issued by the Directors of the Fund will give some idea of the magnitude and importance of the results of the first campaign:—

The Palace of Knossos.—"The discoveries made at Knossos throw into the shade all the other exploratory campaigns of last season in the Eastern Mediterranean, by whatever nationality conducted. It is not too much to say that the materials already gathered have revolutionised our knowledge of prehistoric Greece, and that to find even an approach to the results obtained we must go back to Schliemann's great discovery of the Royal tombs at Mycenæ."

"The building itself, of which some two acres superficial area have been now uncovered, proved to be a palace, beside which those of Tiryns and Mycenæ sink into insignificance." "At but a very slight depth below the surface of the ground the spade has uncovered great courts and corridors, propylæa, a long succession of magazines containing gigantic store jars that might have hidden the Forty Thieves, and a multiplicity of chambers, pre-eminent among which is the actual Throne Room and Council Chamber of Homeric kings. The throne itself is carved out of alabaster, once brilliant with coloured designs, and relieved with curious tracery and crocketed arcading, which is wholly unique in ancient art. In the Throne Room and elsewhere was a series of fresco paintings, excelling any known examples of the art in Mycænæan Greece. A beautiful life-size painting of a youth, with an European and almost classically Greek profile, gives us the first real knowledge of the race who produced this mysterious early civilisation. Other frescoes introduce us to a lively and hitherto unknown miniature style, representing, among other subjects, groups of women engaged in animated conversation in the courts and on the balconies of the palace. The monuments of the sculptor's art are equally striking; a marble fountain in the shape of a lioness's head with enamelled eyes; fragments of a frieze with beautifully cut rosettes, superior in its kind to anything known from Mycenæ; an alabaster vase naturalistically copied from a Triton shell; a porphyry lamp with graceful foliation, supported on an "Egyptianizing" lotus column; and the head and parts of the body of a magnificent painted relief of a bull in *gesso duro*."

As showing the extreme antiquity of the earlier elements of the building, it may be mentioned that in the great Eastern Court was found an Egyptian seated figure of

diorite, which can be approximately dated about 2000 B.C., and has been published in the Annual Report of the Egypt Exploration Fund for 1900. Below this again extends a vast Stone Age settlement, which forms a deposit in some places twenty-four feet in thickness.

Some of the discoveries in the "House of Minos" supply new and instructive indications as to the cult and religious beliefs of its occupants.

"One of the miniature frescoes represents the façade of a Mycenæan shrine, and the Palace itself seems to have been a sanctuary of the Cretan god of the Double Axe, as well as a dwelling-place of prehistoric kings. There can be little remaining doubt that this huge building, with its maze of corridors and tortuous passages, its medley of small chambers, its long succession of magazines with their blind endings, was in fact the Labyrinth of later tradition which supplied a local habitation for the Minotaur of grisly fame. The great figures of bulls in fresco and relief that adorned the walls, the harem scenes of some of the frescoes, the corner stones and pillars marked with the *labrys* or double axe, the emblem of the Cretan Zeus—explaining the derivation of the name "Labyrinth" itself—are so many details which all conspire to bear out this identification."

"But brilliant as are the illustrations thus recovered of the high early civilisation of the City of Minos and of the substantial truth of early tradition, they are almost thrown into the shade by a discovery which carries back the existence of written documents in the Hellenic lands some seven centuries beyond the first known monuments of the historic Greek writing. In the chambers and magazines of the Palace there came to light a series of deposits of clay tablets, in form somewhat analogous to the Babylonian, but inscribed with characters in two distinct types of indigenous prehistoric script, one hieroglyphic or quasi-pictorial, the other linear. The existence of a hieroglyphic script in the island had been already the theme of some earlier researches by Mr. Evans, based on the more limited material supplied by groups of signs on a class of Cretan seal-stones, and the ample corroboration of the conclusions arrived at was therefore the more satisfactory. These Cretan hieroglyphs will be found to have a special importance in their bearing on the origin of the Phœnician Alphabet."

"But the great bulk of the tablets belonged to the linear class, exhibiting an elegant and much more highly developed form of script, with letters of an upright and singularly European aspect. The inscriptions, over a thousand of which were collected, were originally contained in coffers of clay, wood, and gypsum, which had been in turn secured by clay seals impressed with finely engraved signets, and counter-marked and countersigned by controlling officials in the same script while the clay was still wet. The clay documents themselves are beyond doubt the Palace archives. Many relate to accounts concerning the Royal Arsenal, stores and treasures. Others perhaps, like the contemporary cuneiform tablets, refer to contracts or correspondence. The problems attaching to the decipherment of these clay records are of enthralling interest, and we have here locked up for us materials which may some day enlarge the bounds of history."

The Lower Town of Knossos.—"Exploratory digging by Mr. Hogarth to the south and west of the Palace revealed a veritable Pompeii of houses of the same early period, which yielded, among other things, by far the finest series yet found of vases of the singular primitive Cretan polychrome style, unrepresented in European museums. One remarkably well preserved block of buildings appears to be a group of shrines devoted to a Pillar worship, such as is known on the Phœnician and Palestinian coasts, and of which the Palace itself supplies an example connected with the cult of the Cretan Zeus."

The Cave of Psychro.—"Finally, the clearing of the Cave of Psychro, long notorious for its rich votive deposits, was also carried out by Mr. Hogarth. This cave is no other than the holy Dietæan Cavern, in which Hesiod and Virgil state that the

Supreme God was cradled. There took place the legendary union of Zeus with Europa, and therefrom, as from another Sinai, Minos brought down the law after communion with the God. The blasting away of the fallen rocks in the upper half of the Grotto revealed a rude altar of burnt sacrifice, and a sacred enclosure or *Temenos*, cumbered with deposit from five to seven feet deep, full of vases, libation tables, weapons, and implements in bronze, bone, and iron, statuettes in terra-cotta, and models of everyday objects, dedicated to the God. In the lower half, a profound abyss, where a gloomy subterranean pool, out of which rises a forest of stalactitic pillars, continues into the heart of the mountain, a great surprise was in store. For not only was the bottom mud full of bronze statuettes, gems, and articles of male and female use, but the vertical slits in the pillars were found to have been used as niches, and to contain an immense number of votive double axes, weapons, and trinkets." "The discoveries made in this cave cover the whole primitive period of Cretan history back to the pre-Mycenæan epoch."

Future Work.—"Among the other sites included in the British Concessions are two votive caves, the citadels of more than one Mycenæan city of Eastern Crete and Præsos, the ancient capital of that region, within whose walls the language of the old indigenous stock—the Eteokretes of the *Odyssey*—survived to historic times. Here, if anywhere, should be found the key to the undeciphered hieroglyphic script of Crete; and it is to be hoped that sufficient funds may be forthcoming to begin excavation at this spot during the coming season under the auspices of the British School at Athens. The exploration that has thus been taken in hand is not confined to the backwaters of antiquarian research. It lies about the fountain-head of our own civilisation. Inadequately supported as it has been, it has already produced results which throw an entirely new light on the first development of high art, the origin of letters, the early religion and ethnography of the Greek lands, the most ancient connections between Europe and Egypt. To ensure the execution of the still extensive programme before it, the Cretan Exploration Fund needs contributions to the amount of at least £3,000."

Subscriptions may be paid either to Mr. George Macmillan (as Hon. Treasurer), at St. Martin's Street, London, W.C., or into the account of "The Cretan Exploration Fund" at Messrs. Roberts, Lubbock & Co.'s, Lombard Street, E.C. J. L. M.

Religion.*

Lang.

The Making of Religion. By Andrew Lang, M.A., LL.D., St. Andrews. Second Edition. London. Longmans, 1900. 8vo, pp. xxii, 355. Price 5s. net.

3

The new edition of "The Making of Religion" does not call for a lengthened notice in these pages. It is true that the revolutionary theory contained in the second part of the work has never yet been fully discussed. But to do so would require nearly as much space as the original occupies. On the other hand, the question raised by the earlier half of the book as to the validity and import of certain phenomena, vulgarly called "spiritualistic," is hardly one for the Anthropological Institute.

The new edition is introduced by a new preface, in which Mr. Lang restates his position, makes a few explanations (including an indication of what he thinks probable as to the origin of a savage belief in "a kind of germinal Supreme Being"), and attempts to meet some objections. But the last word has yet to be said.

Cautious controversialists must not rest satisfied with reading the preface. In the body of the work a number of modifications have been made where specific statements or inapposite comparisons have been challenged. Some of the rhetoric has been pared down, and some of the printers' errors in the first edition have been corrected. The latter were numerous, and survivals (such as *reduce* on p. 207 for *seduce*, and *Utilexo* p. 209 for *Utikxo*) still disturb the reader. The volume is handy, and the reduction in price will probably render it popular.

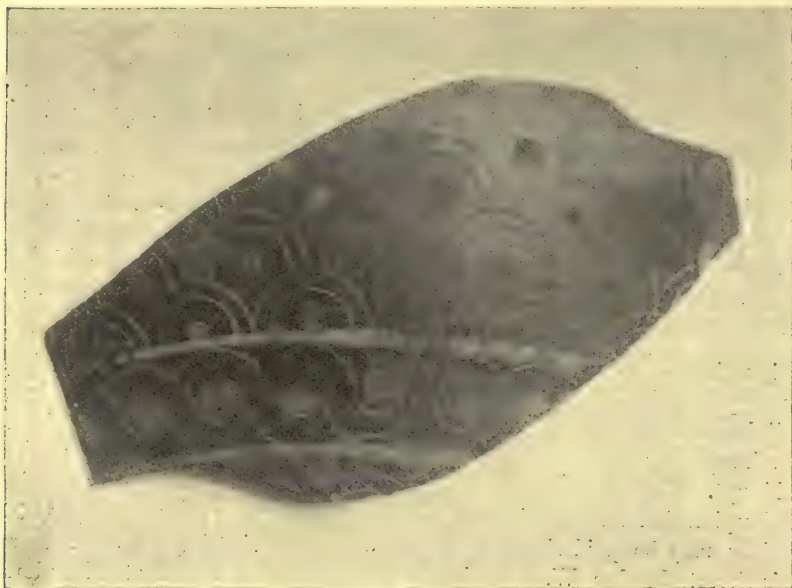
E. S. H.

Guilloche Ornament.**Balfour.**

Guilloche Pattern on an Etruscan Potsherd. Communicated by Henry Balfour, M.A., Curator of the Pitt-Rivers Museum, Oxford.

4

The potsherd shown in the photograph, is of some little interest as illustrating apparently one of the many origins of the pattern known as the *guilloche*. The fragment is from an Etruscan tomb near Rome, and formed part of the collection of the late John Wickham Flower, now in the Pitt-Rivers Museum at Oxford. The main design of



the vessel, which was of large size, would seem to have consisted in a series of incised double concentric circles so arranged as to present an overlapping or "fish-scale" effect. The work

is rather carelessly carried out, and the effect is slightly irregular, while in one case the inner circle is omitted. One row is seen to consist of similar double concentric circles (the two circles being wider apart), and these overlap one another to the extent of the width of the space between any pair of the concentrics. In some cases the outer circles have been almost completed, giving almost the effect of overlapping transparent discs, but more to the right of the fragment (as viewed in the figure) the outer circle lines are broken with more care and intention, and the "over-and-under" effect of a perfect guilloche is practically arrived at. It would appear as though this specimen exhibited the genesis of a guilloche by a more or less unconscious process, beginning with concentric circles in series, "slipping" so as to overlap, and suggesting the adoption of the new design of combined running scrolls, the "over-and-under" or "plaiting" effect being at this stage only imperfectly grasped. In view of the numerous independent series of transitions by which the guilloche has been arrived at in various regions, this example may be of interest.

H. B.**Folklore: Animal Superstitions.****Thomas.**

O mercado de grillos; por N. W. Thomas. Published in *A Tradição*, II., 9 (September, 1900). Pp. 129-133.

5

A short discussion of the meaning to be attached to the sale of certain insects and birds in various countries of Europe, usually at fixed dates.

J.

Nigeria.*

Robinson.

"*Nigeria, Our Latest Protectorate.*" By the Rev. Canon Robinson, M.A.
1900. London, Horace Marshall. 8vo, pp. xii., 222. Map and photographic
illustrations. Price 5s. net.

6

The issue of Canon Robinson's recent work, entitled "*Nigeria, Our Latest Protectorate*," is most opportune in view of the extension of British rule in the upper waters of the Niger. The volume before us deals almost exclusively with that region which for administrative purposes is now known as Northern Nigeria, and particularly with the Hausa people, who are by far the most important race inhabiting this region. Canon Robinson is well qualified to give us information concerning the Hausas, for as student of the Hausa Association he has visited Kano, the great commercial centre of the Hausa States, and has lived amongst the Hausas resident in North Africa, and as a result of his studies of the Hausa language and people he has brought out a Dictionary of the Hausa language, some specimens of Hausa literature, in addition to a small grammar, and the translation of the Gospel of St. John. The second chapter of his present book gives some account of the origin of the Hausa people, showing that although the earlier traditions may be unreliable, their history can be traced back to the 16th century, but not very much is known about them until the year 1802, when the conquest of the Hausa States by the Fulahs took place. Attempts have often been made to connect the Hausas with the Semitic races, but neither their language nor their physical characteristics appear to favour this view. The Hausa language is believed by the author of "*Nigeria*" to be in some way akin to Berber, but its exact relation to other languages must for the present remain doubtful. As to their physical characteristics, the Hausas seem to be true negroes, but they are capable of great mental and physical development. Mention is made of their great superiority as soldiers, so much so that the term of Hausas has been applied in many cases to native troops serving under the British flag, even though only a certain proportion might be true Hausas. The Hausas are also able to carry very heavy loads, and are thus most useful as carriers. Canon Robinson gives a graphic description of the commercial tastes of the Hausas generally, and the chapter on Hausa writings and traditions indicates something of their mental capacity. It is believed that, although by virtue of the Fulah Conquest the Hausas are nominally Mohammedans, a large number of them are heathen to this day, and the Mohammedan influence has not been predominant in Hausaland for more than a century.

"*Nigeria*" may be regarded as a good introduction to the study of this interesting race, to which it may be hoped that before very long there may be many contributions from those who at the present time are brought in contact with them, so that we may realise the importance of the nation which by the enterprise and foresight of Sir George Goldie has been brought under the influence of the British Crown.

C. F. H-B.

Pacific: Easter Island.

Edge-Partington.

On the Origin of the Stone Figures or Incised Tablets from Easter Island.
Communicated by J. Edge-Partington.

7

In the Smithsonian Report for the year ending 30 June, 1889, there is an elaborate paper on Easter Island, contributed by Paymaster Wm. J. Thomson, of the U.S. Navy, which deals very carefully with the history, &c. of this island from its discovery to the visit of the U.S. Warship *Mohican*, when a careful survey was made of the island. Until the publication of this paper it was generally supposed that all clue had been lost to the history or origin of the colossal stone statues and of the incised tablets. It is, therefore, the more astonishing that during the short time that the *Mohican* was at Easter Island Mr. Thomson was able to obtain from the natives the most minute details of how these images were quarried, how transported, and placed in position upon the

platforms prepared for them. He acknowledges, however, that the fact of the images being in all stages of incompleteness in the workshops, and abandoned *en route* to the coast in various directions, indicates, that the work was suddenly arrested; and yet no record has been handed down of the disturbance of any of the volcanoes on the island.

Of the incised tablets he says, "Their existence was not known until missionaries settled upon the island." The ability to read their characters may have continued until 1864, when the greater portion of the population was carried off by the Peruvian slavers. During the stay of the *Mohican* two of these tablets were secured, and an old man, the patriarch of the island, was induced, under the influence of rum, to translate them, along with other known specimens, photographs of which were shown to him.

As far as I am aware, no criticism of this paper appeared until Captain H. V. Barclay, R.M.L.I., late of H.M.S. *Topaze*, read a paper before the Royal Geographical Society of Australasia (South Australian Branch), on April 14th, 1898. After describing the visit of H.M.S. *Topaze* and the general features of the island, he, too, remarks that everything points to the sudden cessation of work, and that this was probably caused by some great volcanic catastrophe. Many of the figures, he says, are now standing vertical, but partly buried in volcanic mud, dust, and scoria. Captain Barclay attaches great importance to the evidence of this sudden cessation from work as being a proof of a vast volcanic outburst subsequent to the erection of these particular statues, which could not fail to have affected the whole area of the island and of every inhabitant on it, yet in the whole of these so-called translations of the tablets there is not a word about any such catastrophe; and yet had these people been descended from those living at that time some dim memory of it must have been handed down from father to son. Therefore, either the tablets were made subsequent to the date of the half-buried statues, and by a different race of people, who possessed no knowledge of any catastrophe, or else supposing them to have been made prior to the catastrophe, then we have the untenable position that the knowledge of how to read them was handed down from generation to generation through a period when the whole island must have been almost, if not quite, uninhabitable owing to the violent outburst of the great crater, and yet, though remembering the smallest detail of an obscure picture-writing, all knowledge of this terrible time is lost. Not only is this the case, but many of the so-called translations bear evidence of modern teaching. I think, therefore, that it may fairly be said that we are now no nearer the history of the statues or the meaning of the inscriptions on the incised tablets than we were before the publication of Mr. Thomson's paper. J. E-P.

Consanguinity.*

Davies.

Consanguinity as a Factor in the Ætiology of Tuberculosis. A paper read at the Meeting of the British Medical Association at Ipswich, by Dr. Charles Davies, of Ramsey, Isle of Man, reported at length in the *British Medical Journal*, September 29th, 1900, p. 904. 8

Dr. Davies thinks favourable opportunities for observing the effects of in-breeding are to be found amongst the inhabitants of the Isle of Man. For 600 years very little new blood has been introduced, and marriages, for the greater part, have been made between couples belonging to the same parish. The mortality from phthisis is 25·7 per 10,000 living inhabitants for the whole Island, nearly double that for England; the mortality for the isolated parish of Lonan, in which the families are closely related by marriage, and have been for many generations, is 41·17 per 10,000 inhabitants. Dr. Davies regards the high mortality as due to an in-breeding of families especially susceptible to tubercular infection. Unfortunately he gives no detailed results of an investigation into the various families within the parish, and how far the incidence of tuberculosis coincides with the degree of consanguinity. A. K

Mesopotamia : Astrology.*

Thompson.

The Reports of the Magicians and Astrologers of Nineveh and Babylon. **9**
 Vol. I., *Cuneiform Texts*; Vol. II., *English Translation and Transliteration.*
 By R. C. Thompson. London, Luzac & Co., 1900. 85 plates, pp. xvii, xci, 147.
 Price 12s. 6d. per volume net.

This is a book which is by its very nature more interesting to assyriologists than to anthropologists. Those who are deeply versed in the astrology of the Middle Ages will doubtless find valuable material for comparison with Western developments; but it is extremely difficult to discover any general principles underlying the decisions of the astrologer, and the study of them seems likely to throw no more light on ethnological questions than the consideration of the linotype machine would throw on the origin of the alphabet. If it is true that Babylonian religion is a highly complicated system, this is even more true of magic and astrology. The developments are so much the result of conscious endeavour that they do not come into the province of the ethnologist to a much greater extent than modern Anglican theology. Add to this, that the style is obscure, and the phraseology intentionally vague, and it is clear that the book is rather a happy hunting ground of the linguist than of the anthropologist, and to the linguists we accordingly commend it. The print is good, both in the cuneiform and the Roman characters, and there is an index, vocabulary, and table. There is also material bearing on the history of the calendar, and in one or two passages an instrument is noticed which seems to have been a kind of clock.

N. W. T.

Natal.

Balfour.

Native Smoking Pipes from Natal. Collected by H. D. R. Kingston, M.D., **10**
 and described by Henry Balfour, M.A.

The four pipes figured in the accompanying illustration were collected some years ago by Dr. H. D. R. Kingston in Natal. The small-sized water pipe is of a well-known



NATIVE TOBACCO-PIPE FROM NATAL.

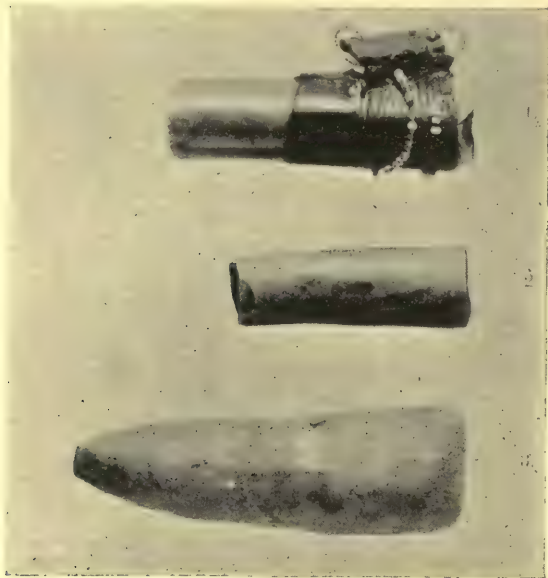
Scale, about one-fifth natural.

form in common use among the natives of South Africa, particularly those of Kaffir extraction. It consists of a cow's horn, through a hole in the side of which is fixed a hollow reed, on the top of which is fixed a bowl. This bowl presents the chief point of interest in this specimen, for instead of being laboriously made, after the native fashion, out of steatite or some other stone, it consists of an ordinary penny stoneware ink-bottle, inverted so that the neck fits on to the reed, while the bottom has been broken away to form an open bowl. Nothing could have been better adapted to the purpose, and, as I have heard of other similar examples, I gather that this use of discarded ink bottles is fairly usual.

The ink bottles as such are of no use to the natives, but become valuable when empty

and discarded by the white man. Both tobacco and Indian hemp are smoked in these pipes; the mouth is applied to the large opening in the horn and the smoke drawn through water in the horn. This specimen was obtained from an old Kaffir who was smoking it at the Agricultural Show at Pietermaritzburg in May, 1889.

The three smaller and extremely simple pipes were confiscated from convicts at one of the Natal convict stations where Dr. Kingston was medical officer. Convicts are not



NATIVE TOBACCO-PIPES FROM NATAL.

Scale, $\frac{1}{2}$ natural.

allowed to smoke until they have served a certain time with good behaviour. Two of these pipes (figs. 1, 2) are simple short tubes of bone, wide open at both ends. One of them (fig. 1) is partly wrapped in skin, and is decorated with beads, and would be worn suspended as a *charm* round the neck, in order that its real function might escape detection leading to confiscation. The third (fig. 3) is of clay and of tapering form, with wide aperture at the larger end forming the bowl, and narrow orifice at the pointed end which serves as the mouthpiece. These illicit clay pipes would be baked at the road-side fire, tended by one of the gang for the coffee kettle while at work, or in the cook-

house by one of the "sweepers," who are not very strictly watched. These and the bone pipes are used either for tobacco or hemp, whichever can be obtained. H. B.

Folklore: Ireland.

On certain Wells in Ireland. Communicated by Professor J. Rhys, with extracts from a letter of Sir Henry Blake, G.C.M.G.

Rhys.

11

One day not long ago I had the good fortune to meet Professor Mahaffy, and the conversation was directed by me to the question of certain Irish wells which were not to be approached with impunity. He mentioned the story, which I append, and said it was from Sir Henry Blake, Governor of Hong Kong, that he had heard it. I wanted it in full for my forthcoming book on "Celtic Folklore," which has since been published by the Clarendon Press. So I wrote to Sir Henry Blake and received an ample reply; but as it has come too late for my "Celtic Folklore," I send his letter to you, as it is far too good to be lost. It is dated Government House, Hong Kong, 30th October, 1900, and runs as follows:—

"I heard of the incident related by Professor Mahaffy, when stationed at Belmullet, about the year 1866. The island is Innis Gloria, a small island lying off Termoncara, an old churchyard in the Mullet about 2 miles from Binghamstown. There are but few families living on the island. On the occasion referred to every male was away in Belmullet, when heavy weather came on which lasted for several days. No woman dared to take water from the well, the tradition being that if they did so the water would turn to blood and worms. They were literally perishing with thirst when,

happily, a son was born. The infant was immediately taken to the well, and a tin 'pannikin' was held in his hand with which the much needed water was ladled out. Dean Lyons, Roman Catholic Dean, who was parish priest at Binghamstown, tried ineffectually to break down this superstitious observance. The island was once connected with the Mullet, and at low water the remains of a causeway may still be seen. The place was always considered holy, and every funeral procession to Termoncara goes out as far towards the island as the tide will allow before turning into the old churchyard. In the old ruined church exists, or existed—I write from recollection of over 30 years ago—an old wooden image supposed to be of the Virgin or of some one of the Saints. To this the people attributed miraculous powers, and large numbers visited the island to pray to it. I heard, but cannot vouch for its truth, that Dean Lyons took this image out to sea and sank it by attaching weights to it. Some time after there was a heavy storm, during which the image, or idol, was washed ashore. I am afraid to mention the name of the well on the island, but I have a dim idea that it was a holy well of St. Brigid; however, 'Erris and Trelawney,' a book by the Rev. Caesar Ottway, published about 1850, contains a very exhaustive account of that portion of the County Mayo.

"In the Island of Inniskea, south of the Mullet, there is a still more curious superstition, for here the object of reverence, having the power of calming the sea when in great storms the fishermen are in danger, by being brought out from its flannel cover and carried to the sea, is a stone, now in two or more pieces, called the 'knievogue,' or little saint, not even in the shape of a human figure. Popular tradition assigns to foreign aggressors, or to Cromwell's troops, the breaking of the image, and here again the clergy stepped in with an attempt to remove the knievogue, which was the really paramount object of worship on the two islands of Inniskea. The curate induced the islander in whose keeping the knievogue was, to hand it over to him, and, accompanied by his henchman, he set out in his boat across the harbour from the south to the north island, but during his passage a great storm arose, and he was saved with difficulty. He concealed the image in the north island, and went away. But he was watched by an old hag who could not understand his movements, and by whom the precious knievogue was found and restored. Each year a new flannel covering is made for it. But this was all forty years ago, and I cannot say what iconoclasm may not have been introduced by that destroyer of folklore, the national schoolmaster."

So far in answer to my question; but Sir Henry Blake adds the following information about another practice:—

"Between Belmullet and Binghamstown is a large well to which women come to pray for the recovery of sick relatives. They go round the well seven times on their knees, while telling their beads. If at the conclusion of their devotions any living thing is seen in the well their prayer is answered, and they retire filled with the blessed elixir of Hope. I have seen a poor woman kneeling for hours over the well with hands clasped, and gazing with agonised anxiety into the clear waters. I remember thinking how much apprehension one might relieve by dropping a few worms into the well now and again! I have not come across this particular superstition in any other part of Ireland."

I do not wish to offer any remarks on Sir Henry Blake's letter, but I may say that after this remarkable instance of his interest in Irish folklore I shall probably not be alone in wishing him back in Ireland, however happy he may feel in the discharge of his duties at Hong Kong.

J. RHÏS.

Siam.***McCarthy.**

Surveying and Exploring in Siam. By James McCarthy, F.R.G.S., Director-General of the Siamese Government Surveys. London, John Murray, 1900. 8vo, pp. xii + 215. Price 10s. 6d. net.

12

Mr. McCarthy's work is an account in narrative form of his personal work in connection with the survey of Siam during many years. When first engaged by the Siamese Government the author had to begin work practically single-handed, and for some years was chiefly engaged in educating a staff of young Siamese assistants to assist in the work of the survey of the country.

The story of the triangulation of the Northern frontiers of Siam, as they existed before 1893, is a remarkable record of physical endurance and patient and monotonous labour of an exhausting character.

The physical difficulties of the country, the absence of transport facilities, the scantiness of population—and consequent scarcity of supplies—and the violent character of the fevers which exposure in Indo-China is sure to induce, make it one of the most trying portions of the globe to travel in. When Mr. McCarthy began his work in Siam, moreover, the majority of the people inland knew very little about Europeans or their habits, and the chiefs regarded them with suspicion and dislike. Moreover, the sextant and the theodolite conveyed a general idea of magic, which was uncanny to the ordinary hillman, and consequently, without doubt, viewed with disfavour by the spirits of the forest, the river, and the mountain, as well as by the hardly less numerous petty officials of the Lao States. With the most important landowners thus at first leagued against him, even official documents with the Royal seals of the Bangkok Court upon them failed to secure him from passive obstruction, and even active interference. Thus Mr. McCarthy's claim that his work was carried out under much discouragement is, in fact, not exaggerated, and no Gold Medallist of the Royal Geographical Society has ever better deserved the honour.

It is a pity that a record of such a really fine piece of scientific work should be spoiled somewhat by the jerky style in which it is written, and a certain sense of incompleteness which characterises the information the author gives regarding the country in which he worked and the peoples inhabiting it. The ordinary reader will get a somewhat confused idea of the geography and ethnology of Indo-China unless he reads with care. He will be rewarded here and there, especially if he has travelled under difficult conditions himself, with some passages which refer to places which have hardly ever been described before, and which singularly appeal to the imagination. Such, for instance, are the descriptions of the uplands of the Chieng Kwang highlands, and the scenes from some of the highest peaks of Indo-China beyond the Me Kong. Indo-China is very rich in beautiful scenes, but its beauties are often hard to win. The surveyor or the miner, who must penetrate into the deepest recesses of nature, are those to whom they are most open; and among all the joys of earth there is none so keen as that of the traveller standing upon the verge of the lonely glories of Nature. These moments are evidently, from Mr. McCarthy's account, to be enjoyed in Siam, and fortunately too; for the conditions of inland travel are not too full otherwise of unalloyed pleasures.

Undoubtedly the most interesting portion of Mr. McCarthy's work is that which deals with the very interesting races inhabiting the hill districts north of latitude 7°. While the Lao or Tai people generally inhabit the elevated valley lands, throughout the rough forest tracks among the mountains a number of tribes are found living as a rule a roving life, speaking different languages, and having different customs. Their number and variety are a puzzle to the traveller, and it is very difficult to classify them, or to come to any satisfactory explanation as to their relationship to one another. At the same time it is possible to distinguish a group of tribes, generally known to the Siamese and Lao by the prefix Ka, *e.g.*, the Ka Yuen, Ka Hok, and some others,

including the Lanten, who are a very primitive group wearing hardly any clothes, worshipping only the evil spirits in the nature round them, and cultivating burnt forest clearings with scanty crops of cotton, rice, or Indian corn. The other tribes are generally more civilised, and are expert in silver work or embroidery, with which they adorn themselves in the most quaint and picturesque costumes to be found in the Far East. Several of the latter show distinctly Chinese characteristics, such as the Meo, Yao, and others. To within the last six years a steady movement of these peoples has been apparent from the unsettled territories of the Chinese frontiers on the north and east to Siamese territory on the south and west. This movement has at present ceased, owing to the establishment of comparative security and peace around Tongkin, and the extension of French rule to the left bank of the Me Kong. It will be interesting to see what the future of these liberty-loving shy-mannered mountaineers will be. A complete and exhaustive study of them has yet to be made, and will be of the greatest interest. Mr. McCarthy gives us much that is important regarding them, but he merely whets the appetite on a subject with which comparatively few writers have dealt.

A number of photographs, and some pen and ink sketches, help to illustrate the text. A good index and triangulation charts, with the map constructed from the survey, add greatly to the value of the work. H. W. S.

Burmo-Chinese Frontier.*

Government Report.

Report on the Administration of the Chin Hills for the year 1899-1900. Rangoon. 45 pages, price 1s. 6d. 1900.

13

Report on the North Eastern Frontier for the year 1899-1900. Rangoon. 21 pages, price 11½d. 1900.

Report on the Administration of the Shan States for the year 1899-1900. Rangoon. 112 pages, price 1s. 6d. 1900.

In these three reports we have a complete account of the measures which are being taken by the British Government to bring the wild tribes along the Burmo-Chinese Frontier under control. But, as is usually the case with savages brought under the influence of civilisation, the process of education is fatal to them. Thus Mr. Hildebrand notices that the population in the States of Naungpale and Nammekon has decreased 50 per cent. since 1899, and he goes on to say, "The chiefs and people are aware of it, of course, and are somewhat alarmed at it. They ascribe it to (a) the migration to Burma, (b) to the many deaths among both children and adults. I am absolutely unable myself to account for such a very sudden change from what was apparently a healthy community in 1875 to what is now evidently but the remnants of a race very quickly dying out. The migration to Burma can, I think, scarcely account for more than 10 per cent. of the vacancies. The next thing that strikes one is the change in the people themselves. From being a blustering set of semi-savages, all going about armed to the teeth with guns, *dahs*, and spears, they are now a shrinking, timid people, going about almost entirely unarmed. I scarcely saw a gun or a spear the whole journey through these States, and I have formerly sat with hundreds of them standing round and wandering about my camp, not one of whom carried fewer than three spears and possibly two *dahs*, and most of them also with a gun. From living, as they used to do, by raiding their neighbours, and carrying men, women, children, and their cattle into captivity, they are now mere plodders of the soil, with no more predatory instincts apparent than in the peaceful law-abiding Shan or Taungthu. Their reformation, for the time, at any rate, is complete, and it has been accomplished so suddenly that, accompanied as it is by so many deaths, it is rather painful to see it. They seem to have lost all heart, and I feel quite sorry for them." In fact, they are disappearing like the Tasmanians before the advance of civilisation, and will in a short time be extinct. W. C.

American Negro.*

Du Bois: Eaton.

The Philadelphia Negro; a Social Study. By W. E. B. Du Bois, Ph.D. **14**
Special Report on Domestic Service. By Isabel Eaton, A.M. (No. 14 of the
 Series in Political Economy and Public Law of Publications of the University of
 Pennsylvania.) Pp. xx, 520.

Dr. Du Bois, who is now the Professor of Economics and History in Atlanta University, records in this work the results of an inquiry into the present condition of the negroes of Philadelphia, mainly conducted in the seventh ward of that city. He hopes that his study will emphasize the fact that the negro problems are problems of human beings, that they cannot be explained away by fantastic theories, ungrounded assumptions, or metaphysical subtleties. The inquiry occupied fifteen months, and was undertaken by the University of Pennsylvania at the instance of Miss Susan P. Wharton. It is analogous to the work performed by Mr. Charles Booth, in his monumental volumes on the life and labour of the people of London. The negroes are growing in number more rapidly than the whites, and the proportion of women and of persons between the ages of 18 and 35 is greater among them than among the whites. Their death rate is high. The practical importance of a study of the present social condition of a race, which, though it dwells with others in a large city, is separate from them in almost every respect, is indicated by the observation that "the class of negroes which the " prejudices of the city have distinctly encouraged is that of the criminal, the lazy, " and the shiftless : for them the city teems with institutions and charities ; for them is " succour and sympathy ; for them Philadelphians are thinking and planning ; but for " the educated and industrious young coloured man who wants work and not platitudes, " wages and not alms, just rewards and not sermons—for such coloured men Philadelphia " apparently has no use." Though race prejudice is not as great as it used to be, it is still powerful enough to keep down the progress of the negro, however capable and intelligent he may be.

The method adopted was to select the ward of the city which contained the largest population of negro descent, in which they amount to nearly one-third of the whole population, and number nearly 9,000, or one-fifth of the negro population of the thirty-seven wards into which the city is divided, and to visit every house inhabited by them armed with six schedules of questions. This, it may well be believed, was a mission requiring great tact and judgment, as some of the questions injudiciously put might have raised feelings of resentment, and either answers might have been withheld or false answers given. It is, perhaps, not surprising, therefore, though it is disappointing to the anthropologist, that no anthropometric measurements or observations were attempted, and the inquiry was made exclusively a sociological one. The educational condition disclosed was relatively not unsatisfactory, 81½ per cent. of the whole being able to read and write. The occupation of 61½ per cent. of the males and 88½ per cent. of the females was that of domestic and personal service (as compared with 17 per cent. for males and 38 for females in the whole population of all colours). The negroes of the seventh ward group themselves into 2,276 families, of which 19 per cent. are so poor as to earn \$5 and less per week on the average. Much valuable information is given as to their organised life, which mainly centres in the churches, almost wholly apart from the whites ; as to criminality, pauperism, and alcoholism among them, and generally as to their environment. Dr. Du Bois' general conclusion is that the negro is " here to stay," and that it is for the advantage of both races that he should make the best of himself, so that the white race ought to help him and not hinder him in doing so ; but that the negro race has an appalling work of social reform before it. A bibliography of books relating to the negro generally, and to Philadelphia negroes in particular, as well as one of books and pamphlets written by Philadelphia negroes, is appended. Miss Eaton's able Report pursues the inquiry further in the special direction of negro domestic service, and contains a great number of valuable statistics and acute observations.

E. W. B.

ORIGINAL ARTICLES.

China.

With Plate B.

Read.

Relics from Chinese Tombs. Communicated by C. H. Read, F.S.A., President of the Anthropological Institute.

15

A correspondent of mine in China, an English Jesuit missionary in the province of Shen-si, sent home during the past year the contents of an early mediæval Chinese tomb. I fear that in the recent rising against foreigners, he, like many other worthy men, has fallen a victim to the deep-seated hatred of the Chinese for the foreigner, and that this may be his last consignment. The objects he sent are, from several points of view, of high interest. They consist of two pottery bowls, a bottle or vase, and a mirror. The latter is of the circular kind, fairly thick, and with a raised design consisting, apparently, of animal forms, and an inscription on the back. It is of the usual white bronze, and unfortunately the back is much worn, so that the inscription is barely discernible, and has been declared to be illegible by all the Chinese scholars to whom I have been able to show it. This is the more to be regretted, as my correspondent states that it bears on it the name of an army leader of the Fu-Tang dynasty, and that the interment is thus dated within the limits of this man's life. There is a further difficulty that though the T'ang dynasty is well known as a historical period, the term Fu-Tang is unknown to my Chinese friends. It seems, however, probable that he refers to the T'ang dynasty, which dated from A.D. 618-923, as the character of the objects would suit very well for this period.

The two bowls are of a dull buff clay very well made, in shape like a reversed shallow cone, the whole of the inside and the outside nearly to the foot of each covered with a thick dull red glaze, almost exactly the colour produced by the Meissen chemist, Böttger, in his early essays at reproducing the Chinese ware, with the difference that here the colour is that of the glaze, while his colour was that of the clay itself. The vase is of a long oviform shape, with a small neck, of a grey ware, covered nearly to the foot with a dull brown or invisible green glaze, filled with minute specks of a light tint.

Circular bronze mirrors of the kind now before us are very widely distributed over Asia, and even into Europe. They occur with early bronze remains in Siberian finds, where they are held to be objects of worship, they are found in Central Asia, are not infrequent in the Caucasian tombs, called by Monsieur Chantre "Seytho-Byzantine," and are often found in Southern Russia. In Japan they have been found by Mr. Gowland in the dolmens, which he assigns to a period that ended in the 7th century of our era. There is thus no reason, from the evidence furnished by the mirror, why the interment in which it was found should not belong to the T'ang dynasty.

The vase, though of simple character and style, may equally be placed as far back. Apart from pieces of a known later date, when ancient forms were imitated, and fanciful glazes in vogue, the only vase comparable with it is one in the British Museum from Corea, which had originally on it the dealer's label stating that it was "ten thousand years old." Making the necessary deduction for the hyperbole of the Chinese vendor, it may fairly be assumed that the vase, even if a comparatively modern copy, represented to him and his customers what would be considered a very old piece. If we find that it bears the same character in the make and general appearance as one that is found in circumstances beyond suspicion, the later may reasonably be placed as of some considerable age. By itself, such evidence would justly be thought of little value, but in the present case we have the added testimony of the other objects in the find.

The small red glazed bowls are of a type, as to manufacture and glaze, quite unknown both to me and to several collectors of knowledge and judgment to whom I showed them. It is but seldom, in my experience, that any of the ceramic products of China can be safely assigned to any of the dynasties so early as the T'ang, though the Chinese writers boldly claim that incomparable *porcelain* was made during

that period. Dr. Bushell, in "Oriental Ceramic Art," his magnificent work on the fine collection of Mr. Walters of Baltimore, gives detailed accounts of the jade-like and milk-white translucent wares of the T'ang dynasty, but says nothing of the humbler clay. He states, however, that tea came into general use about this time, and this gives us a slender clue that it may be worth while to follow. The form of these two bowls is precisely that of some of the archaic-looking tea bowls of Japan, and of these, one of the most ancient and valuable kinds is known as *Temmoku*, a type admittedly copied from the Chinese. Is it not possible that the bowls now in question are the tea bowls of the T'ang dynasty, buried with their owner in company with his mirror and his wine bottle? Dr. Bushell makes another statement, that "Arab trade with China was very extensive" during the eighth and ninth centuries," which may serve to explain the wide distribution of the Chinese type of mirror over the rest of Asia, and thus provide another small link in the chain of evidence.

Owing to the strong prejudice of the Chinese against excavations on ancient sites, from the fear of disturbing their departed ancestors, remains of this kind are but rarely to be obtained, and the probable death of my missionary correspondent is, therefore, to be regretted on other than personal grounds.

The dimensions of the objects are as follows:—Diam. of mirror, $4\frac{1}{4}$ in.; diam. of bowls, $5\frac{1}{2}$ in.; height of vase, $7\frac{3}{4}$ in.

C. H. READ.

Obituary: Max Müller.

Macdonell.

Friedrich Max Müller: born 6th December 1823, died 28th October 1900.

Communicated by A. A. Macdonell, M.A., Boden Professor of Sanskrit in the University of Oxford.

16

With Friedrich Max Müller, who died towards the end of last year, has passed away a personality that exercised a wider influence in the world of learning than perhaps



any other scholar of the 19th century. The only son of the distinguished poet Wilhelm Müller and of a daughter of Präsident von Basedow, prime minister of the small Duchy of Anhalt-Dessau, he was born at Dessau in 1823. Losing his father when scarcely four years of age, he was educated in his native town till 1836, but spent the last five years of his school life at Leipzig. Having early shown a talent for music, he for a time seriously contemplated taking up music as a profession, but was dissuaded from doing so by Mendelssohn. He decided to adhere to the study of the classical languages, and entered the University of Leipzig in 1841. But even in his first term he did not limit himself to Latin and Greek, as his lecture-book (*Collegien-Buch*) shows. For, besides lectures on Demosthenes, Aristophanes, Propertius, and Scenic Antiquities, under Professors Hermann, Haupt, and Stallbaum, he attended no fewer than seven other courses, including the Theory

of Musical Harmony, Hebrew Grammar, History of Old German Poetry, Æsthetics, Psychology, and, what will be specially interesting to readers of this journal, Anthropology under Lotze. The assiduity and wide range of his studies is sufficiently apparent from the

fact that he attended no fewer than 49 courses of lectures during the five terms of his University life at Leipzig. By the beginning of his second term, he was, however, persuaded by Professor Hermann Brockhaus, the first occupant of the recently-founded chair of Sanskrit, to devote himself to learning the classical language of ancient India. This was an extremely important step in his career, for Sanskrit was the starting point of his work in four different branches of learning, in all of which he was destined to be a pioneer. The first result of his Sanskrit studies was his translation of the now well-known collection of fables, the *Hitopadeśa*, which he published when only 20 years of age. Having graduated Ph.D. in 1843, he spent the greater part of 1844 at Berlin, where he attended the lectures, among others, of Franz Bopp, the celebrated founder of the science of Comparative Philology, and those of Schelling, the eminent philosopher. To the early influence of the former may be traced his studies in the subject which he represented in the University of Oxford for 32 years. To the teachings of the latter was doubtless due his interest in philosophy, which he maintained to the end of his life; for the last book he published was an account of the *Six Systems of Indian Philosophy* (1899).

Early in 1845 Max Müller went to Paris, where he came under the influence of Eugène Burnouf, eminent not only as a Sanskritist, but also as the first Zend scholar of his day. At Burnouf's suggestion young Max Müller set about collecting materials for an *editio princeps* of the *Rigveda*, the most important of the sacred books of the Brahmans, and the oldest literary monument of the Aryan-speaking family of nations. He accordingly began copying and collating MSS. of the text of that work, and, in pursuance of his enterprise, came over to England in 1846, provided with an introduction to the Prussian Minister in London, Baron Bunsen. Receiving a recommendation to the East India Company from him and from H. H. Wilson, the first Professor of Sanskrit at Oxford, he was commissioned by the Board of Directors to bring out at their expense a complete edition of the *Rigveda*, with the commentary of Sāyana, the great 14th century Vedic scholar.

In June 1847 he visited Oxford to be present at the meeting of the British Association, at which he delivered an address on Bengali and its relation to the Aryan languages. As the first volume of his edition of the *Rigveda* was now being printed at the University Press, he found it necessary to migrate to Oxford. Here he settled in 1848, and spent the rest of his life. In 1850 he was appointed Deputy Taylorian Professor of Modern European Languages, succeeding in 1854 to the full professorship. In 1859 he published his important *History of Ancient Sanskrit Literature, as far as it illustrates the Primitive Religion of the Brahmans*. Dealing exclusively with the Vedic period of Indian literature, this book contains much research on Sanskrit works at that time accessible in MS. only.

On the death of Professor Wilson in 1860, Max Müller became a candidate for the vacant chair, his claims being very strong on the score of both ability and achievements. He was opposed by Monier Williams, who had been Professor of Sanskrit at the East India College at Haileybury till it was closed in 1858. The election being in the hands of Convocation, came to turn on the political and religious opinions of the candidates rather than on their merits as Sanskrit scholars. Party feeling ran high, and large numbers came up to vote. Monier Williams proved victorious, with a majority of 223 out of a total of 1,433 votes recorded.

There can be little doubt that this defeat was a bitter disappointment to Max Müller, and exercised a very decided influence on his subsequent career as a scholar. It marks the second turning point in his intellectual life. Sanskrit studies had formed his main interest for almost 20 years. Had he been successful in the contest he would probably have limited himself almost entirely to his favourite subject, and would thus have produced, during the latter half of his life, works of more permanent value in the

domain of research. But he would hardly in that case have acquired the world-wide fame which he so long enjoyed.

His marvellous industry was now largely deflected into other channels. He began to pay considerable attention to Comparative Philology, which in those days was much more dependent on Sanskrit than it is now. He accordingly delivered two series of lectures on the *Science of Language*, at the Royal Institution, in 1861 and 1863. These lectures, which were afterwards published in an extended form and passed through a large number of editions, soon raised Max Müller to the rank of the standard authority on Philology in the estimation of the English public. Though much of what is contained in them is now out of date, there can be no doubt that they not only for the first time aroused general interest in the subject of Philology in England, but also exercised a valuable stimulating influence on the work of scholars in the 'sixties and 'seventies. As, however, the science of Comparative Philology has been transformed during the last quarter of a century, it would have been impossible to bring these lectures into harmony with the present standard of research without entirely rewriting them. The fact that later editions have only been modified, has led to a good deal of confusion on the subject in this country. It was in these lectures that Max Müller first displayed that power of lucid popular exposition and of investing a dry subject with abundant interest, which has more than anything else contributed to make his name so famous.

Besides various essays on Language, which have appeared in a collected form in the third volume of his *Chips from a German Workshop* (last edition 1899), Max Müller also published in 1888 a philological work entitled *Biographies of Words and the Home of the Aryas*. Another work largely concerned with language is his *Science of Thought*, the main thesis of which is the inseparability of language and thought. This and most of his writings of a philosophical nature abound with clever and ingenious ideas, but he can hardly be said to appear as a systematic thinker in any of them. For his cast of mind was rather that of the poet than the philosopher. In 1868 Max Müller was appointed to the Professorship of Comparative Philology which was founded for his benefit at Oxford. This chair he held down to the time of his death, though he retired from its active duties in 1875.

Max Müller was not only the introducer of Comparative Philology into England. He also became a pioneer in this country of the science of Comparative Mythology founded by Adalbert Kuhn with his epoch-making work, *Die Herabkunft des Feuers*, published in 1849. Beginning with his essay on *Comparative Mythology*, which appeared in 1856, he wrote a number of other papers on mythological subjects, concluding his labours in this domain with a large work entitled *Contributions to the Science of Mythology* (two vols., 1897). His mythological method, based on linguistic equations, has hardly any adherents at the present day. For most of his identifications such as Greek *Erinys* = Sanskrit *Saranyus*, have been rejected owing to the more stringent application of phonetic laws which now prevails in Comparative Philology. Nor does his theory of mythology being the result of a "disease of language" any longer find support among scholars. Nevertheless, his writings in this field also have proved valuable by stimulating mythological investigations even beyond the range of the Aryan family of languages. Max Müller's linguistic and mythological theories in the first place suffered from his investigations being limited to the Aryans. Having, moreover, formed these theories before the appearance of the *Origin of Species*, he never modified them in accordance with the doctrine of evolution.

His mythological work brought several essays on folk-lore in their train. The first of these, dealing with *Popular Tales from the Norse* (1859), was followed by others on the *Tales of the West Highlands* (1861), *Zulu Nursery Tales* (1867), and *Myths and Songs from the South Pacific* (1876). Another treated the subject of *Folk lore* itself (1863). One of the most interesting and important was *On the Migration of Fables*

(1870). It is based chiefly on the investigations contained in Benfey's epoch-making translation of the Sanskrit *Panchatantra* (1859), in which that great scholar traced the westward wanderings of that collection of Indian Buddhist fables from the 6th century onwards and its far-reaching influence on the mediæval literature of Europe.

Allied to Max Müller's mythological researches was his work on the comparative study of religions. Here, too, he was a pioneer; and the literary activity of the last 30 years of his life was largely devoted to this subject. This work was begun with four lectures on the *Science of Religion* at the Royal Institution in 1870. These were followed by a lecture *On the Religions of the World* delivered in Westminster Abbey in 1873. Five years later he inaugurated the annual series of Hibbert Lectures by a course on the *Origin and Growth of Religion, as illustrated by the Religions of India*. Later, he discussed, as Gifford lecturer at Glasgow during the years 1888 to 1892, various aspects of religion, under the titles of *Natural Religion*, *Physical Religion*, *Anthropological Religion*, and *Theosophy or Psychological Religion*.

But of even more far-reaching influence than all these lectures was the great enterprise which Max Müller initiated in 1875, and to devote himself to which he relinquished the active duties of the Chair of Comparative Philology. This was the publication, by the Oxford University Press, under his editorship, of the *Sacred Books of the East*, a series of English translations by leading scholars of important non-Christian Oriental works of a religious character. This undertaking has done more than anything else to place the historical and comparative study of religions on a sound basis. Of the 51 volumes of the series all but one (and the two concluding index volumes) had appeared before the death of the editor. Over 30 volumes represent the Indian religions of Brahmanism, Buddhism, and Jainism, being translations from Sanskrit, Pāli, and Prākṛit; but the series also includes versions of Chinese, Arabic, Zend, and Pahlavi books. Max Müller himself contributed three complete volumes and part of two others to the series.

Though debarred by his defeat in 1860 from officially representing Sanskrit in the University, Max Müller continued to promote Sanskrit studies in many ways. Besides finishing the sixth and last volume of his *Rigveda* in 1873, he published several important Sanskrit texts. Thus, he initiated the Sanskrit series in the *Anecdota Oxoniensia* with four publications of his own, partly in collaboration with pupils; and the three other contributions which have appeared, were all undertaken at his instigation. In 1883 he published a series of lectures on the value of Sanskrit literature, which he had delivered at Cambridge, in a volume entitled *India, what can it teach us?* The main importance of this book lies in the "Renaissance Theory," which he here propounds. He endeavours to prove that for several hundred years there was a cessation of literary activity in India, owing to the incursions of foreigners, but that there was a great revival in the 6th century A.D. This theory, though now disproved by the evidence of inscriptions, exercised a decidedly stimulating influence on Indian chronological research.

Max Müller was, moreover, always ready to help students of Sanskrit informally. Thus, he gave up much of his valuable time to directing the studies of three young Japanese who came to Oxford on purpose to learn Sanskrit, in order to be able to read, in the original, Buddhist works which they knew in Chinese translations only. All of these pupils published valuable work connected with ancient India under his guidance. One of them, Bunyiu Nanjio, translated, at his instance, in 1882, the Chinese catalogue of the many hundreds of Buddhist Sanskrit books, which were rendered into Chinese from the 1st century A.D. onwards. Another, Kenyiu Kasawara, published in the *Anecdota Oxoniensia*, a collection of Buddhistic Sanskrit technical terms. The third, Takakusu, at his instigation,

translated from Chinese in 1896, the travels of the pilgrim I-tsing, who visited India during the years 671-95 A.D.

It is known that in the 7th century, and later, Sanskrit was studied in Japan, where Buddhism had been introduced by way of Corea. But Sanskrit learning had long died out, and in 1879 there was no one in Japan who knew anything of the sacred language of ancient India. Now, Sanskrit is being taught at Tokyo and elsewhere by Max Müller's Oxford pupils, and there is every prospect of these studies leading to important results which will throw light on the early history of the spread of Indian civilisation over the countries of the farther East. This is especially likely now that the news has arrived of a society having been founded in Japan to commemorate the services of Max Müller. One of its objects is the systematic search for Sanskrit MSS. in Japan, Corea, and China. We know that hundreds and thousands of Sanskrit MSS. were taken back by the numerous Buddhist pilgrims from the East, who in the early centuries of our era visited India, the Holy Land of Buddhism. No trace of such MSS. had been found, till, owing to Max Müller's persistent efforts, a Sanskrit MS. of the 6th century, the oldest known at that time (1880), was discovered in Japan. A facsimile of it is to be seen in the Bodleian Library. Max Müller constantly urged scholars and missionaries to search for rare and important MSS. in China, as well as in India. In this way he himself acquired a valuable collection of about 80 Vedic MSS. from India.

Max Müller did much to advance the interests of learning not only by his writings, lectures, and correspondence, but by his personal influence. Familiar from his earliest days with court life on a small scale at Dessau, and afterwards intimate with Baron Bunsen, the Prussian Minister in London, Max Müller became acquainted with our own Royal family, and subsequently with many of the crowned heads of Europe. It was thus, also, that the King of Siam came to subsidise a new series undertaken by Max Müller, under the title of the *Sacred Books of the Buddhists*, of which two volumes had appeared before his death. So, too, an Indian Rajah came forward to enable him to bring out a new edition of his *Rigveda*. It was also to Max Müller's personal influence that most of the European Sanskrit scholars who went out to India in the 'sixties and 'seventies owed their appointments. He thus did much indirectly to introduce scientific methods of research among the native scholars of India; while his edition of the *Rigveda* and his writings on Indian religion and philosophy led to a revival of interest, among the Hindus, in their ancient sacred books, the Vedas. His name, indeed, became more famous in India than that of any other scholar has ever been; and his house in Oxford was a regular place of pilgrimage to all natives of India visiting this country. Max Müller's personal influence also made itself felt by the prominent part he played as president of societies and of Oriental Congresses.

His world-wide fame was largely due to his great ability, industry, and ambition, as well as to his literary gifts and the wide range of his writings; but it was undoubtedly enhanced by a combination of opportunities, such as can rarely fall to the lot of any scholar. When he began his career, Vedic studies were in their infancy, and he had the good fortune to become the first editor of the *Rigveda*, the most important product of ancient Indian literature. Again, nothing was known about Comparative Philology in England when he came over to this country; being the first in the field, he introduced and popularised the new science, and soon came to be regarded as its chief exponent. Moreover, he inaugurated the study of Comparative Mythology in this country. Lastly, it was not till the latter half of the 19th century that the necessary conditions were at hand for founding a science of Religion. Max Müller was there to apply the stimulus with his Hibbert Lectures, and to collect the necessary materials in the *Sacred Books of the East*. Thus, there was a great opening in four highly important branches of

learning; but no one could have taken adequate advantage of them all, had he not been, as Max Müller was, one of the most talented and versatile scholars of the age. Though much in his writings and methods may already be superseded, the far-reaching influence which he has exercised by his works and his personality in promoting the study of man in many fields, will undoubtedly give him a strong claim to the gratitude of posterity.

A. A. MACDONELL.

California: Basket-work.

Dalton.

Note on a Specimen of Basket-work from California, recently acquired by the British Museum. Communicated by O. M. Dalton.

17

An important addition has recently been made to the Ethnographical Department of the British Museum in the shape of a large collection, chiefly from California and Oregon, presented by the Rev. Selwyn C. Freer. The series was formed partly by

Mr. Freer himself, but chiefly by his friend, the Rev. R. W. Summers, who resided in the above-mentioned States for a number of years as a missionary. The collection is especially remarkable for its baskets, and its stone implements and weapons. The former of these two classes is large and representative, furnishing a most valuable complement to the series already in the Museum, part of which goes back to the date of Vancouver's voyage. One of the most remarkable objects is a flexible cylindrical basket ascribed to the Umqua Indians (*figured here*). It has on one side human figures, and on the others representations of horses? and other animals, all inwoven in brown upon a buff ground. This specimen appears to be of considerable antiquity,



and has been pronounced by experts, such as Mr. Wilcomb, of the Golden Gate Museum, San Francisco, and Professor Dorsey, of Chicago, to be a rare and interesting example of a now extinct industry. The objects in stone comprise a fine set of the hemispherical mortars, with cylindrical pestles, which were excavated from graves in San Luis Obispo and S. Barbara counties. The series of lance and arrow-heads of finely worked chert and obsidian is very comprehensive, and includes several examples of remarkable finish.

Of the larger implements, some are very rudely chipped and have a certain resemblance to palæolithic forms.

Among other objects may be mentioned sinkers, hammer stones, shell beads, plummet-shaped stones supposed to be charms, and a few objects in bone. The collection further includes a number of ethnographical objects from the more easterly States of the Union, including a few fine Catlinite pipes. Collections of this kind have a special importance on account of the parallels which they furnish with the industries of the late palæolithic and neolithic ages in Europe. We have here, continuing down to a comparatively recent period, the manufacture of implements and utensils which offer many analogies to those with which the later European bone caves, for example, have made us familiar. Implements of bone are far less numerous, but among objects of this material we may mention unpierced needles, small tubes or cylinders with rudely incised lines, flat implements for smoothing mats, and awls. In addition to the large stone mortars, there are similar objects of smaller size, and red mineral paint, probably used for personal adornment. The peculiar skill shown by these Indians in the manufacture of watertight and other baskets suggests we have here another parallel to a prehistoric industry. The ingenious and artistic people who lived in Western Europe at the period of La Madelaine may well have manufactured baskets of equal perfection, and equally adapted to take the place of pottery.

Mr. Freer's generous gift has most opportunely enriched a section in the Museum which has hitherto been far from complete.

O. M. DALTON.

Stonehenge.

Lewis.

On the damage recently sustained by Stonehenge. Communicated by A. L. Lewis, F.C.A., Treasurer of the Anthropological Institute.

18

The end of the 19th century has been signalled by—amongst other things—the fall of a part of Stonehenge, a misfortune which may not be without its compensating advantage if it should be the cause of the necessary measures being taken to preserve what is left of this unique monument in an intelligible condition.

Stonehenge, it will be remembered, consists of a number of comparatively small stones standing in the form of a horse-shoe with the open end to the north-east, outside which were five "trilithons," or sets of two upright stones, each supporting a huge cross-piece; these were the largest stones of all, and only two sets of them remain complete, the last great change at Stonehenge having been the fall of one of in them January 1797. Outside these was a circle of small stones, and outside these again a circle of larger upright stones, joined at the top by cross stones; both these circles are so defective, especially towards the south-west, that it has been doubted whether they



PLAN OF STONEHENGE.

A. Stone now fallen. BB. Stones which fell in 1797.

ever were complete. It is one of the uprights of this outer circle (marked A on the plan—No. 22 on Petrie's plan) that has now fallen inward, carrying with it the capstone

which connected it with the adjoining stone, and which has been broken in two by striking in its fall the remains of the trilithon which fell in 1797.

It is, perhaps, fortunate that these stones have fallen instead of the remaining stone of the central trilithon, the downfall of which has long been expected on account of its leaning position, an occurrence which, if not prevented, will cause much more damage



VIEW OF STONEHENGE FROM THE WEST.

A. Stone now fallen. BB. Stones which fell in 1797.

than has been caused for centuries, and the practical question for archaeologists is what is to be done to prevent it? Of course, no one advocates "restoration" in the sense of adding new stones to supply the places of those which have disappeared; but, inasmuch as the exact original position of almost every existing stone is perfectly obvious, and inasmuch as exact surveys have been made and published both by Sir Henry James on behalf of the Ordnance Survey,* and by Professor Flinders Petrie,† there should be no objection to setting the leaning stones upright, so as to prevent their falling and breaking themselves and others, and to setting up those that are quite fallen, except those that are too much broken to be capable of being joined together. Such fragments should be left where they are, as also should any the precise original position of which cannot be ascertained. Next comes the question of keeping the stones in their position when they have been restored to it; and the best way to do this would be to dig out the whole interior down to the solid chalk, underpinning the stones while the work was going on, and to fill it up with concrete. In the digging out it might be expected that some relics would be found which might throw light on the date if not on the purpose of the monument; but the objection will no doubt be made that future generations might think that the concrete was part of the original work. This would be less likely to happen if the concrete were covered for its better preservation with half-an-inch of the best asphalt, such as is used in paving the London streets, under which boxes with documents might be buried for the benefit of any future excavators.

* *Plans and Photographs of Stonehenge and of Turnaschan in the Island of Lewis.* 4to. Ordnance Survey: Southampton, 1867.

† *Stonehenge: Plans, Descriptions, and Theories.* 4to. London: Stanford, 1880.

If it were possible to keep things as they are, it might be preferable from an artistic point of view to do so, but it is not possible. If something be not done to prevent them further falls will happen, and where will be the poetry in a shapeless heap of broken stones?

It must, however, be remembered that Stonehenge, though an object of national concern, is private property.

A. L. LEWIS.

Folklore: Ireland.

Hartland.

On certain Wells in Ireland. (See MAN, 1901, 11). Communicated by E. Sidney Hartland, President of the Folklore Society.

19

Professor Rhŷs will find in Dr. C. M. Browne's report on *The Ethnography of the Mullet, Inishkea Islands, and Portacloy, County Mayo*, in the *Proceedings of the Royal Irish Academy*, 3rd Series, vol. iii., page 634, an account of the well on Innis Gloria, or Inishglora, as Dr. Browne gives it, mentioned in Sir Henry Blake's letter. The well, it seems, is dedicated not to St. Bridget, but more appropriately to St. Brendan. The image referred to appears also to be of St. Brendan (see page 633). The image on the island of Inishkea, also referred to by Sir Henry Blake, is now no longer there, having been thrown into the sea by the parish priest. Dr. Browne, however, gives an interesting account of it.

May I take the opportunity of calling the attention of anthropologists to Dr. Browne's reports on the small islands off the West Coast of Ireland? At least six of them have been published in the proceedings of the Royal Irish Academy, and they are full of interest in all departments of the science. In many respects they are model reports. The first of them—that on the Aran Islands—is by Dr. Haddon and Dr. Browne. The work begun in collaboration has been continued by Dr. Browne alone.

E. S. HARTLAND.

Palmistry.

Keith.

The Anatomy of Palmistry. Abstract of a lecture delivered by Dr. Arthur Keith (of the London Hospital Medical College) at the Whitechapel Museum and Free Library. January 15th, 1901.

20

Under the title given above, the lecturer dealt with results which he had obtained during a recent investigation into the physical meaning, development, and comparative anatomy of the lines of the hand.

He showed: (1) that the lines which are present in the hand and the creases which occur at the knees of trousers and elbows of coats are of the same nature, and have equally a psychical meaning; (2) that the lines of the palm were developed towards the end of the second month of foetal life, and were the result of retention of the foetal form of skin along these lines; (3) that the foetal lines, although in the main corresponding exactly to the position in which flexion folds were required in the fully-developed hand, did not correspond to it exactly in some hands; (4) that the lines in the hands of apes correspond to those in man—in many cases with great accuracy—the so-called "marriage line," "line of fate," "circle of Venus," &c., with all the evidence of divorce and unkind fate, being present in the simian just as in the human hand; (5) that certain lines present in the human foetal hand and lost in the adult represented simian lines; (6) that the phrenological interpretations put by palmists on the various conformations of the lines of the hand broke down absolutely when put to the test of practical experience; (7) that the evident success of palmists was due to a play on the complex and equivocal characters of the events which make up human life.

Folklore: South Africa.

Hartland.

On some Problems of Early Religion, in the light of South African Folklore.

Abstract of the Presidential Address delivered by Mr. E. Sidney Hartland, F.S.A.

21

at the Annual Meeting of the Folklore Society, January 16th, 1901. (To be published in full in *Folklore*, Vol. XII., 1901.)

After a tribute of sorrow for the losses sustained by anthropological science during the year, in the deaths of Lieut.-General Pitt Rivers, Miss Kingsley, Dr. Ulrich Jahn, Professor Max Müller, and Mr. Frank Cushing, Mr. Hartland turned to the outlook of folklore at the opening of the twentieth century. A hundred years ago Brand was apologising for his investigation of the causes of "vulgar rites and popular opinions." Before his words were published Scott had issued the *Minstrelsy of the Scottish Border*, and the brothers Grimm the first volume of their *Kinder und Hausmärchen*. With these two works and Brand and Ellis' *Observations on Popular Antiquities*, the foundations of the science were securely laid, but nearly two generations were to elapse before Maine, MacLennan, Morgan, and Tyler began to build upon them. In view of the results of the researches initiated by these distinguished men we needed little encouragement to anticipate an early solution of the great enigmas of human civilization and the history of religion. He was content to believe that in good time all the important issues would be determined, though that would have to be preceded by arduous inquiry, perhaps in directions hitherto unthought of. Not until our own time had it been possible to enter on the inquiry into the beginnings of religion in a scientific manner. Hypothesis after hypothesis had been framed, only to be destroyed by criticism. This should not discourage us, nor should it obscure the portions of truth they contained.

After referring to Mr. Lang's book on *The Making of Religion*, Mr. Hartland took up Mr. Marett's paper on *Pre-animistic Religion*, which had appeared during the past year in the Transactions of the Society (*Folklore*, XI., 162 ff.) and, expressing general agreement with the theory of Teratism there put forward, proceeded to an examination of the evidence afforded by the Bantus of South Africa as to their belief in a Supreme Being. He dealt successively with Callaway's *Religious System of the Amazulu*, the evidence of Moffat and other missionaries to the Bechuana and Basuto, and M. Junod's recent work on the Baronga, arriving at the conclusion the Bantus had no distinct belief in a Supreme Being, and that the evidence pointed to the gradual growth of a belief in a god, a process not yet complete. Judged by Mr. Payne's canon (*History of the New World called America*, I., 276 ff.) the Bantus had all emerged from savagery and were on the lower stage of barbarism. They must have developed from wandering hordes of savages, and their religion must have undergone a corresponding evolution. Remains of totemism and mother-right were to be found increasing in volume from the more advanced to the less advanced members of the race. These were examined at some length, and the question was then put how it was that ancestor-worship had developed and supplanted totemism. This he attributed to the growth of the patriarchal system, acting on the beliefs already prevalent in the continued existence of the dead and in transformation and impermanence of form; and he proceeded to explain the mode in which it was possible the change had come about. This, of course, was a mere hypothesis. He did not pretend to have solved any of the problems he had touched, but simply to suggest some ways in which the folklore of South Africa might contribute to their solution.

Most of his illustrations had been taken from tribes in British territory. The opening of the new century found us in a position in South Africa which was unique in its opportunities for the advancement of anthropological science. The Anthropological Institute and the Folklore Society had combined to urge upon the Government to seize those opportunities in the two States lately added to the Empire. This was essential, alike in the interests of government and of anthropological science. Other nations, the

Indian Government, and even our own colonies, were recognising the theoretical importance and practical value of anthropological inquiries; and surely the mother-country would not be content to be left behind. The urgency of the case was all the greater, because the evidence was gradually being effaced by civilization. The same considerations touched everybody. The same duty to preserve the evidence of our past lay upon all of us individually. We could wait for the framing of hypotheses; we could not wait for the collection of evidence which was so rapidly passing away.

Mr. Hartland concluded by urging upon the Society and upon individuals to ascertain and record the facts as the most important duty before them, in view of the march of civilization and the changes which have proceeded so rapidly during the nineteenth century, and which the twentieth is certain very soon to complete in this country, if not elsewhere.

REVIEWS.

Wales : Ethnology.*

Rhÿs and Brynmor-Jones.

The Welsh People. By John Rhÿs, M.A., Principal of Jesus College, and Professor of Celtic in the University of Oxford; and David Brynmor-Jones, LL.B., M.P. 1900. London, F. Unwin. Second and revised edition. 8vo., pp. xxvi, 678. Price 16s. 22

This is a valuable and instructive volume. One hardly knows whether to call it a book; it is rather a collection of chapters or essays on various subjects connected with the Welsh people. Thus, the first two chapters are devoted to the ethnology of ancient Wales and to the Pictish question, and set forth Professor Rhÿs's views as to the non-Aryan character of the language of the Picts, whom he sometimes speaks of as the Aborigines. One of two interesting maps represents the supposed ethnological status of the British Isles in the first century A.D., the aborigines (or their language), being shown as occupying almost the whole of Scotland beyond the Forth, and the greater part of Ireland, though small portions of the latter country are set down as Goidelic, and Wexford and Wicklow shires as Brythonic or Gallobelgic. Physical anthropology, by the way, is entirely neglected in this volume; otherwise the prevalence of blond coloration in the county Wexford might have been used to support the Galatic attribution of the district. The presence of what we provisionally call Iberian types in the British Isles was recognised by somatologists before philologists began to find traces of pre-Keltic speech; and I still hold to my prediction that some day the Ugrian or Mongoloid types which occur in Wales will be correlated by the philologists with vestiges of Ugrian language, and that when they succeed in doing this they will show little gratitude for the hint.

Great stores of learning and ingenuity are developed and utilised in the Pictish chapter; I note especially the argument from name-systems which occupies the terminal portion of it. Professor Rhÿs seems to omit all mention of the bronze-using race. At least, he dates the advent of the Goidel about the 5th or 6th century before Christ, though with the qualification, "or perhaps earlier." Now the date of arrival of the bronze men is generally (I do not say whether rightly or not) put much earlier than that. He identifies the Fir Domnaan with the Goidelic Damnonians.

A great part of the book is taken up with the political history of Wales; and the naïve and candid partiality of the writer of these chapters is sometimes amusing. The ruling race produced some very creditable specimens, such as the good Howel Dda, the lawgiver, and the gallant Gruffydh ap Llewelyn, whose head his traitorous subjects sent to Harold Godwinson, and such as the last two Llewelyns; but on the whole it was a stock of valiant, sanguinary, treacherous, and poetical ruffians, from the Gildas-

abominated Maelgwn to David the Last, the trebly-dyed traitor who deservedly swung on the Shrewsbury gallows, but with whom the author evinces a little misplaced sympathy.

The elaborate and discriminative character of his fellow countrymen drawn by Giraldus is, of course, quoted; and though some of the virtues and vices alleged by him may have been fairly attributable to local and temporary circumstances, there is no doubt that, in the main, the picture is correct, even at the present day. Thus, the eloquence, the *savoir faire*, the poetical and musical talent, the quick and lively temper, are still there. I have not Giraldus at my elbow, but I think the author of this chapter misquotes him somewhat. He says, "They were immoderate in their love of food and intoxicating liquors." What Giraldus did say was, I think, that they did not waste their substance in feasting, as the English did; that they were temperate from habit and economy, but would gorge themselves at another's expense.

One cannot help having some doubts, which are not altogether unshared by the authors, as to whether the elaborate code of Howel Dda was ever put thoroughly into force. And the land system of Wales, though it bore a general resemblance to that of other so-called Aryan peoples, was so peculiar and complicated that it must have been difficult to carry out in troublous times. Professor Rhys, by the way, after stating that the Aryan, by which he means the dolicho-blond, type, is rare in Wales, proceeds to extend the assertion to England generally, wherein I think he is wrong.

Professor Rhys's view as to the non-Aryan character of the aboriginal language, and its influence on the idioms of the Neo-Keltic tongues, is carried out further in a most interesting appendix by Professor Morris Jones. He has no hesitation or difficulty in tracing much of the popular Welsh syntax to a Hamitic, Berber, or Egyptian connection; and this applies also to Gaelic.

It may be noted that the authors put the probable population of the 13 Welsh counties, from the 11th to the end of the 13th century, at something under 150,000. This means much less than 20 to the square mile; and I am inclined to think it an insufficient estimate. Firstly, on the analogy of other pastoral countries; secondly, considering the necessity of a large population to supply men for the savage and deadly warfare, both intestine and external, which was constantly carried on; and, thirdly, because the evidence of surnames shows that since the days of Bosworth Field, and even earlier, the descendants of the mediæval Welshmen have been continually migrating into England, where their representatives now amount to several hundreds of thousands.

JOHN BEDDOE.

Arabia.*

Bent.

Southern Arabia. By Theodore Bent and Mrs. Bent. London, Smith, Elder & Co., 1900 (xii + 455, portrait, maps, and illustrations).

23

The interest of this book consists in the Hadhramut chapters. Those dealing with Bahrein and Mascat might have been omitted, for they add nothing to what is known from better equipped travellers. The excavations in the island were fruitless; and the descriptions of scenery and life both there and in Oman are not above tourist level. The accounts of Dhofar and the Gara country, and of the Eastern Sudan, were worth rescuing from magazine pages, since most of the ground is new and it is pretty thoroughly covered, though not of much interest. The chapters on Sokotra and the Fadhlî and Yafei oases, near Aden, it is impossible to criticise in face of the pathetic appeal which closes them.

Theodore Bent will always be remembered as the second European traveller, and the first Englishman, who ever got into the main Hadhramut valley. In attaining his end he showed immense energy and courage. He and his wife assumed no

disguise,—the better plan, as many recent Arabian travellers, Pelly, Doughty, the Blunts, Huber, von Euting, and Baron Nolde have found. Mr. Bent visited the upper towns, Koton and Shibam, but did not, like his predecessor Leo Hirsch, reach Siwun and Terim, nor the reputed natural wonders of Bir Borhut. Indeed, three quarters of the great Wady have yet to be explored. Mrs. Bent was able to see a little harem life, closed to Hirsch, and, with their photographs of Koton and Shibam, the English explorers have advanced our knowledge. Considering, however, the peculiar advantage they enjoyed in being under the protection of a Sultan duly impressed with the British *raj* in Aden and India, and in having with them a Moslem Indian surveyor and his staff, and considering their own natural pluck and enterprise, it is the more pity they went up so ill prepared in the language and knowing so little of previous Arabian travel. In both respects they are far behind Hirsch, and their book, beside his, has little value. In the preliminary notes on the population on p. 79, the Bents perhaps show acquaintance with the standard treatise on the Hadhramut, that issued in French by the Javanese Dutch official, van den Berg, in 1886, but they never allude directly to it, and never seem to follow the obvious and useful plan of checking its hearsay statements by personal observation. Had a scholarly method of comment on Niebuhr, Wellsted, Von Wrede, van den Berg, and Hirsch (whose book appeared in 1897) been adopted as the basis of the narrative, this section of the book would have itself acquired standard authority. As it is, the travellers apparently had not realized what it was essential to observe and record, and what, on the other hand, is commonplace of all Arabian travel; and the trivialities of caravan life, already rendered more than familiar by Burckhardt, Palgrave, and Doughty, to mention only the greatest names, fill two-thirds of the account, suggesting in every paragraph unfortunate comparisons with the deeper knowledge, the truer sympathy, and the sense of style that inspired those brilliant narratives.

Petty mistakes in Arabic, and even in Greek, serve as warnings against implicit faith in the anthropological evidence recorded. The most valuable savage lore is contained in the account of the naked Gara tribe, who encourage the milk production of their cows by giving them a stretched calf-skin to lick. What is said of jinns, afrits, and relics of stone worship, evinced by Bedouin behaviour to tombstones, is not new, but may be compared with Doughty *passim*. The list of Mahri words in use in Sokotra is welcome, so little being known of what is probably a last relic of the Sabaeen tongue; but it must be accepted with reservation. The Sokotra camel marks are a very useful addition to our knowledge of primitive Arab script, but the explorers came on very few Himyaritic monuments in the Hadhramut, the best being the altar facing p. 145. It remains to be seen, however, whether the rest of the Wady will not materially add to the collections of Halévy and Glaser. One would have liked to hear more of the megalithic monuments and the rites at Kabr Houd and Kabr Saleh; but these folklore and religious questions of the interior seem to have appealed less to the explorers than the identifying of Ptolemy's harbour in the Frankincense country.

H.

Egypt: Sesostris.*

Sesostis. By Dr. Kurt Sethe. *Untersuchungen zur Geschichte und Altertumskunde Aegyptens*, Band II. Heft. 1. 1900.

Sethe.

24

Egyptian history, in the traditional form which passed current among the Greeks, possessed no better-known name than that of Sesostris. Round that name clustered legends as numerous as those of the Arthurian cycle. Yet, in modern times, Egyptologists have always been in doubt as to the identity of the king who bore it. Manetho, indeed, assigns him to the 12th dynasty, in the place which has been given by

science to the kings generally known as Usertsen II. and III. Most Egyptologists have, however, rejected this view, because of the dissimilarity of the names Sesostris and Usertsen; and have inclined towards an identification with Rameses II., the name of that monarch being sometimes written in a way which was considered to represent the ancient form of Sesostris. In an admirable study, Dr. Sethe shows Manetho to have been correct, as indeed he usually proves to be. Usertsen should be read Sen wosret, the element "Usert" or "wosret" being the name of the goddess, and therefore being placed first in the hieroglyphs, *honoris causa*. The degeneration of Sen-wosret into Sesostris is next traced. The success with which this is done is the best confirmation of the soundness of the philological method which Dr. Sethe himself has done so much to establish.

From the name, Dr. Sethe turns to the legends, and, after sifting and comparing these in their various forms, seeks to trace them to their roots. In most cases he finds in the actual history of the kings called Sen-wosret the germs from which the legends sprang. It is impossible here to deal with the details of the investigation; it may, however, be noted that the stories of conquests in Asia, are, according to Dr. Sethe, due to confusion with legends of Sheshonq. Of the book as a whole, it may be said that the main thesis is convincing and final, and the detailed elaboration is full of new and suggestive points.

A. H. GARDINER.

Mesopotamia: Archæology.*

Sayce.

Babylonians and Assyrians, Life and Customs. By the Rev. A. H. Sayce. London, J. C. Nimmo, 1900. 8vo, pp. vii, 273. Price 3s. 6d.

25

This is the first volume of a series, to be edited by Professor Craig of the University of Michigan, which will be felt by the large section of the reading public to supply a real want. "The Semitic Series," as it is to be termed, will consist of at least thirteen volumes, and will deal with all the branches of the Semitic race in a popular but scientific manner.

Professor Sayce seems to have taken his task much too lightly, with the result that the work may in some respects be held up as an example of what no one, not even a writer who knows his subject, should put before the public—a piece of book-making, and a bad one at that. We find the same examples doing duty more than once; but let that pass. The errata are remarkable; we read of "an inscription in *uniform* characters." The word "cunei" occurs in the middle of a sentence, where it has no earthly meaning. On p. 266, under *superficial measures*, we read:—"Time was reckoned by the double hour, and in early times the *weight* was divided into three watches." Of course, the sentence as originally written referred to measures of time. The carelessness which allowed such an incongruity to pass without correction is characteristic of the whole book, so far as manner goes.

The matter is fortunately more reliable. Some of the views on mythology are perhaps hardly what we should expect in a work dated 1900. Tammuz, for example, is rent by a boar's tooth, and the reader is given his choice between two explanations of the myth—the boar is either the winter or the parching heats of summer. Dr. Frazer has evidently lived in vain, so far as Professor Sayce is concerned.

The idea of the series is an excellent one, and we trust that the editor will insist on a reasonable standard of typographical accuracy in future.

N. W. T.

Religion : Asia.*

Forlong.

Short Studies in the Science of Comparative Religions, embracing all the Religions of Asia. By Major-General J. G. R. Forlong, F.R.S.E., F.R.A.S., M.A.I., &c. (Quaritch.)

26

The title of this work would seem to be unduly modest, inasmuch as it consists of xxviii + 663 large and closely-printed pages. It is only in reference to the magnitude of the subject of which it treats that it can be described as "short." In an equally modest preface the author explains that it is rather for the general reader than the specialist, and is intended to help him to some definite and useful conclusions on the whole question of the origin and development of religion, and on its parts. A very useful part of the work, from this point of view, consists in three sets of chronological tables which General Forlong has constructed. The first sums up the results of his first study on Jainism and Buddhism, prehistoric and historic, commencing with the Chinese patriarchal King Fû-hsi in 3370 B.C., following the development of Jainism in India and Bactria from the 21st century B.C., through varying circumstances, to its full establishment throughout Upper India in 526 B.C., and giving contemporary records of the events in other countries bearing upon the development of religion, and the dates when other teachers preached Buddhist doctrine, to its comprehension in Greece in the 4th century B.C., until Asoka became the Emperor of Magadha, and virtually of Northern Hindostan, in 259. Here a subsidiary table gives the chronology of the events of his reign from his conversion to Jainism in 256 to a life of piety, mercy, and tenderness to all having life, to the edict of 232, which describes his former religion as sin, and proclaims Buddhism as the religion of chief excellence. This was a time of great Buddhist missionary activity, leading to its adoption in China in place of Jainism about 200. In 169, Jews brought back from the East a knowledge of Eastern faiths. In 70, a lingam is worshipped in Bactria as a tooth of Buddha. For 500 years the mythology of Buddhism goes on increasing. The dispersion of Buddhism becomes accelerative early in the Christian Era by the efforts of Brahmanism to expel it from India, until finally the translation of Buddhist scriptures and commentaries becomes active at about the same time that the Christian gospels are disseminated. This brief summary shows what a wide expanse of the World's religious history is comprehended in the first study. Its conclusions are confirmed by the interesting lecture on "Coincidences," delivered some time ago by Professor Max Müller.

The second set of chronological tables is appended to a study of the historical and religious development of the Indian Archipelago and adjacent States, called Trans-India, commences with the occupation of Tonkin in 2357 B.C., proceeds rapidly to the development of the wealth and civilization of India in 500 B.C., the civilization of Trans-India by the Hindoos in 100 B.C., the embassy from Rome to Cochin China in 222 A.D., the failure of Theodosius's cruel attempts to suppress paganism in 384, the acceptance of Buddhism by Japan in 552, the peaceful spread of the Indian faiths in the 7th century, the attempt to efface them in Tonkin in 767, the concession of home rule there in 875, to our own times.

The third table treats mainly of Mazdean times, beginning with Turanian migrations towards India in the 24th century B.C., and leading through the teaching of Pythagoras in 545, the building of the second temple at Jerusalem, in the 4th century B.C., the foundation of the Parthian empire in 261, its extension by Mithradates II. in 127, its conquests in Syria, Bactria, and the Punjab in the 1st century B.C., to the commencement of the Christian Era, the siege of Jerusalem, the foundation of the Sasanian Empire in 228, the conversion of Constantine, the growth of the Romans, the claim to papal supremacy, the Mahamadan hejira, and the end of the Sasanian dynasty in 650. This table illustrates the Trans-Persian Zarathustra or Zoroaster and his faith in Ahura or Aurhra Masda, one supreme God, giver of life and wisdom.

E. W. B.

ORIGINAL ARTICLES.

Australia.

With Plate C, 1-2.

Balfour.

A Swan-neck Boomerang of unusual form. Communicated by Henry Balfour, M.A., Curator of the Pitt Rivers Museum, Oxford.

27

I am anxious to draw attention to the implement shown in Plate C, fig. 1, in order that I may ascertain whether any similar boomerang exists in other museums or collections. The specimen is in the Pitt Rivers Museum, Oxford, having formerly been in Mr. Norman Hardy's collection. Instead of being cut out of a single piece of wood specially selected for the purpose, as is the case with the swan-necked boomerang as usually seen (one of which is figured for comparison, Plate C, fig. 2), this example has been apparently made from an ordinary boomerang having but slight curvature, and the spur at the end is formed by fixing with gum a flat piece of wood to the boomerang head. The spur is painted in red and white patterns, and the boomerang is coated with red ochre. The spur is protected with a sheath of *melaleuca* bark. The hook-like spur is $6\frac{1}{2}$ inches long. This specimen was procured from natives of MacArthur River, Gulf of Carpentaria, N.T., S. Australia. I should be curious to ascertain whether others of similar construction have been recorded, and also whether this example is to be regarded as intended for ceremonial use; the painting seems to suggest this. The specimen of ordinary type figured with it is from the tableland between the Roper and MacArthur Rivers. H. B.

Australia.

With Plate C, 3-5.

Balfour.

Three Bambu Trumpets from Northern Territory, South Australia. Communicated by Henry Balfour, M.A., Curator of the Pitt Rivers Museum, Oxford.

28

I have recently been able to secure for the Pitt Rivers Museum at Oxford three examples of the trumpets made by natives of Northern Territory, South Australia, in the region between Ports Essington and Darwin (Plate C, 3-5). Though characteristic of this particular region, comparatively few of these instruments have found their way into museums. They are of interest as being of very limited range, and as being wind instruments of music, a class which is very poorly represented among native Australians. Wooden tubes, *ilpirra*, hollowed out by white ants, were obtained by the members of the Horn Expedition in Central Australia. These were used for singing through, and not for blowing as trumpets (Spencer and Gillen, p. 607). W. E. Roth mentions emu calls consisting of hollow logs, $2\frac{1}{2}$ to 3 feet long, which are blown into to produce a sound, as being used throughout North-West Central Queensland (Ethnological Studies, p. 97). Unless one includes the "bull-roarers" as wind instruments, as one should do, I do not recall any other wind musical instruments in Australia excepting the bambu trumpets of the Northern Territory. Coppinger ("Voyage of the 'Alert,' 1883, p. 204) saw in a camp of the Larikia tribe, Port Darwin, "pieces of hollow reed about 4 feet long, which they blew like cow-horns." R. Etheridge describes and figures ("Macleay Memorial Volume," 1893, Linn. Soc. N.S.W.) three bambu trumpets obtained by Mr. H. Stockdale from the Alligator tribe, Port Essington, varying from 3 feet to 3 feet 3 inches in length, and from quite straight to strongly curved. All are engraved on the surface. J. E. Partington figures ("Album of the Pacific," I. ser., 353, fig. i.) a straight example from Port Essington, called *chero*, which is in the British Museum; also (III. ser., pl. 136, figs. 2 and 3) a specimen (37 inches) from the Gulf of Carpentaria, *oolomba*, "blown like a bullock horn," and one from Western Queensland (8 feet 6 inches), of which it is said, "the performer sings into one end." Both these instruments are in the Adelaide Museum. Of the specimens which are figured here

(Plate C), number 1 is of small size ($31\frac{1}{4}$ inches), very slightly curved, reddened all over, and scratched and dotted over the surface. Number 2 is of large size (3 feet $10\frac{1}{2}$ inches across the curve), is strongly curved, and tapers somewhat from end to end. The surface is scraped, reddened, and finely engraved in places, figures of the dugong and turtle being discernible; black gum has been smeared on the larger end. The native name is given as *mam-ma-lie*. Both these were procured by Mr. J. V. Parkes, Inspector of Mines, in 1891, near Port Essington, and were in the collection of Mr. Norman Hardy recently presented to the Pitt Rivers Museum by Mr. R. F. Wilkins.

The third specimen (No. 3) is nearly straight, 4 feet $3\frac{1}{2}$ inches long, tapering slightly. The silicious cortex is scraped away in bands at the nodes, the intervening spaces being roughly engraved in zig-zags. The lower end has been coated with "blackboy" gum. I purchased this specimen from an English dealer, and it probably comes from the Port Essington district.

In all the specimens the ends are cut off square, and the nodes have been broken through, so that the instruments are merely plain tube-trumpets. H. B.

India : Madras.

Fawcett.

Notes on the Dômb's of Jeypur, Vizagapatam District, Madras Presidency.
Communicated by F. Fawcett, Local Correspondent of the Anthropological
Institute.

29

The Dômb's are an outcast jungle people, who inhabit the forests on the high lands fifty to eighty or one hundred miles from the east coast of India, about Vizagapatam. Being outcast, they are never allowed to live within a village, but have their own little hamlet adjoining a village proper, inhabited by people of various superior castes.

It is fairly safe to say that the Dômb's are akin to the Pânô's of the adjoining Khond country, a pariah folk who live amongst the Khonds, and used to supply the human victims for the Mèriah sacrifices. Indeed the Khonds, who hold them in contemptuous inferiority, call them Dombô's as a sort of alternative title to Pânô's. The Païdis of the adjoining Savara or Saora country are also, doubtless, kinsmen of the Dômb's.

In most respects their condition is a very poor one. Though they live in the best part of the Presidency for game, they know absolutely nothing of hunting, and cannot even handle a bow and arrow. They have, however, one respectable quality, industry, and are the weavers, traders, and money-lenders of the hills, being very useful as middlemen between the Khonds, Savras, Gadaben, and other hill-people, on the one hand, and the traders of the plains on the other. I am informed, on good authority, that there are some Dômb's who rise higher than this, but cannot say whether these are, or are not, crosses with superior races. Most likely they are; for most of the Dômb's are arrant thieves.

It was this propensity for thieving, in fact, which had landed some hundreds of them in the jail at Vizagapatam when I visited that place lately, and gave me the opportunity of recording their measurements, and of making some notes of their customs; and these measurements and notes I now submit for what they may be worth, as bearing on the Dravidian problem of Southern and Central India.

Tribal Divisions.—With one exception, all the individuals in the tabular list given below, are Païdi Dômb's. The one exception is No. 22 in my notes, who is an Augnia Dômb. Between Augnia and Païdi Dômb's there is no intermarriage, and the Augnia are reckoned inferior "because they eat frogs." Both, on the other hand, eat beef, which, it is hardly necessary to say, is eaten in Southern India by none but those on the lowest step of the social ladder. No doubt there are other tribes of Dômb's also besides

the Paiddi and Augnia ; but these are the only tribes with which I have come in contact.

Anthropometric Observations.—The tabular analysis which follows gives the results (in centimetres) of my measurements of the Dômbis in the jail at Vizagapatam : —

MEASUREMENT (in centimetres).	Average of 10.	Average of 25.	Maxi- mum.	Mini- mum.	Mean above.	Mean below.	Average to Height = 100.
Stature - - -	160·0	161·9	170·0	152·3	163·2	158·2	
Height, sitting - -	79·7	81·5	86·4	72·6	83·5	78·7	50·3
„ kneeling - -	117·4	119·2	123·8	112·2	122·3	116·5	73·6
Span - - -	169·8	171·8	183·3	156·5	176·5	164·7	106·1
Chest measurement -	78·2	78·3	81·3	74·1	80·1	76·0	48·4
Shoulders, width - -	38·4	38·7	41·9	36·2	40·3	37·3	23·9
Left cubit - - -	45·4	45·6	48·5	41·1	46·9	44·1	28·2
„ hand, length -	17·9	18·2	19·4	17·1	19·0	17·5	11·2
„ „ width - -	7·5	7·6	8·5	7·0	7·9	7·4	
„ „ midfinger -	10·8	10·9	11·6	10·2	11·1	10·7	6·7
Hips, width* - -	25·8	25·4	28·3	22·7	26·4	24·4	15·7
Left foot, length* -	24·6	25·0	27·0	23·4	25·8	24·4	15·4
„ „ width - -	8·3	8·5	9·3	7·8	8·9	8·2	
Cephalic length - -	18·6	18·8	20·0	17·6	19·2	18·2	11·6
„ width - -	14·3	14·3	14·9	13·8	14·5	14·0	
„ index - -	76·7	75·6	81·9	70·2	78·6	73·3	
Bigoniæ length - -	10·7	10·8	11·4	10·1	11·0	10·5	
Bizygomatic length -	13·0	13·4	14·2	12·5	13·6	13·0	8·3
Maxillo-zygomatic index -	82·1	81·2	87·8	75·6	83·3	79·2	
Nasal height - -	4·3	4·4	5·1	3·8	4·7	4·1	2·7
„ width - -	3·6	3·8	4·3	3·3	4·0	3·6	
„ index - -	85·4	86·5	100·0	64·7	92·5	79·9	
Vertex to tragus - -	12·4	12·6	14·0	11·5	13·1	12·3	7·8
„ chin - -	18·2	18·5	19·8	17·0	19·0	18·0	11·4
Midfinger to patella -	11·5	11·5	15·2	6·0	13·8	9·6	7·1
Weight (lbs. avdp.) -	103·9	105·7	121·2	86·5	112·5	99·5	

* N.B. In seven individuals the left foot was longer than the hips were wide.

Colour of the Skin.—Of the total number, 34·9 per cent. were between Nos. 28 and 43 of Broca's colour-types ; 21·7 per cent. were of No. 28 ; 21·7 per cent. of No. 35 ; 21·7 per cent. of No. 43.

Colour of the Eyes.—Of the total number, 4 per cent. were darker than No. I. of Broca's colour-types ; 32 per cent. were of No. I. ; 28 per cent. were between No. I. and No. II. ; and 36 per cent. were of No. II. or lighter.

General Physical Characteristics.—I append more detailed descriptions of five individuals, taken at random from the first dozen in my list, as follows :—

No. 1.—Glabella and orbital ridges prominent ; nasal notch deep. Hair on the head plentiful ; no hair on the cheeks ; slight moustache and beard ; none on the chest ; none visible on the arms ; moderate hair on the legs. Ear lobes and helix of left ear pierced ; this applies to all the individuals examined. Second toe slightly longer than the big toe.

No. 2.—Orbital ridges fairly prominent ; nasal notch deep. Hair on the head plentiful and somewhat grey ; none on the cheeks ; slight moustache and beard ; none on the chest ; hair scarcely visible on the arms ; moderate to slight on the legs.

No. 3.—Glabella and orbital ridges not apparent ; nasal notch slight. Hair on the head plentiful ; none on the cheeks ; slight moustache and beard ; none on the chest or arms ; slight on the legs. Tattooed on the right fore-arm.

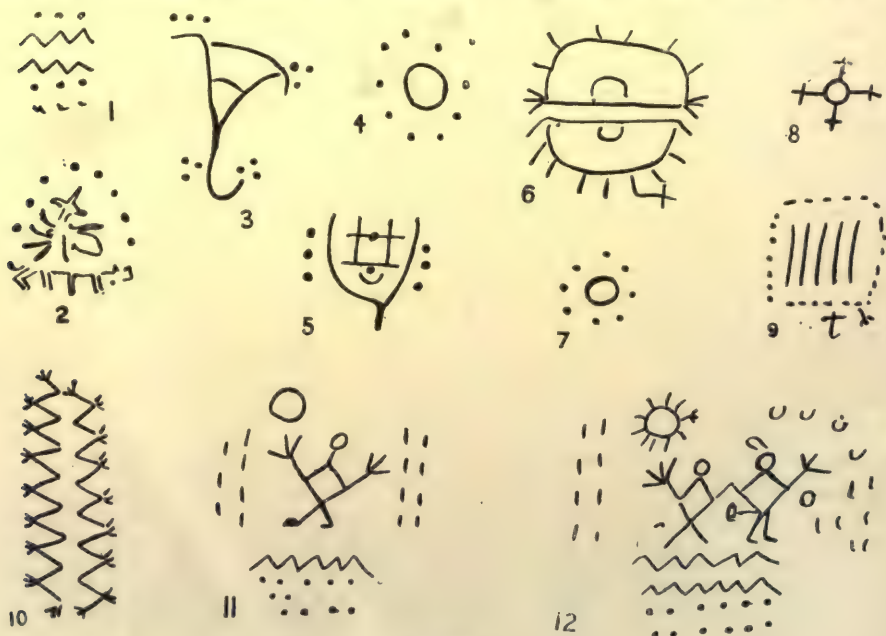
No. 5.—Glabella and orbital ridges scarcely apparent ; nasal notch deep. Hair on the head plentiful, and mixed with grey ; none on the cheeks ; very slight moustache and beard ; none on the chest and arms ; a few hairs on the calves of the legs. Tattooed.

No. 8.—Glabella not apparent ; orbital ridges very slight ; nasal notch very slight ; nasal line slightly depressed (this is unusual) ; nasal spine not apparent. Hair on the head plentiful and greyish ; none on the cheeks ; slight moustache and beard ; no sign of hair on the chest ; scarcely apparent on the arms ; very slight on the legs.

Some of those who were measured subsequently were more hairy than these. No. 19, in particular, was abnormally hairy in the armpits, and rather thickly covered on the abdomen and legs. But he was fair of colour, and probably a cross. The blackest individuals, on the other hand, seemed to have diverged least from a common type, and these, as a rule, had little or no hair on the cheek, slight moustache and beard, no hair on the chest or arms, and very little on the legs.

I have noted that these Dômbes are uncommonly like the ordinary Madras Pariah, but slightly fairer ; all had, like the Pariah, a very strong and unpleasant odour. They were an ill-made and poor-looking lot of men ; one only, out of 25, being really well-shaped and sturdy. One only showed signs of incipient baldness. The teeth of all were excellent.

Tattooing.—This is done by Gojjias, or rather by the women of that people. The native name for the tattooing is *bana*. The patterns, of which examples are given below, are extremely rude. No. 1 measured 7 cm. from top to bottom, the strokes



represent a scorpion, and the dots jasmine flowers. No. 2 represents "flowers." No. 3, on the left forearm, represents a scorpion and some stars. No. 4, also on the left forearm, represents the moon and stars. No. 5 is known by the name Kattâri, but I could not discover what it is intended to be. No. 6, of uncertain significance, was tattooed (10 × 7 cm.) on the left forearm. No. 7, which closely resembles No. 3, and measures 4 × 5 cm., on the right forearm of the same individual. Nos. 8, 9, and 10 are unexplained. No. 10 is sometimes ornamented also with dots. No. 11, tattooed on the left deltoid, represents a man, the moon, stars, and a necklace. No. 12 was tattooed on both shoulders of one man. Its elements closely resemble those of No. 11, and represent a man and a woman, several moons, the sun, a necklace or chain, and more stars. These patterns were said to be, one and all, purely ornamental, and not in any way connected with totems or tribal emblems.

Personal Names.—The following were the names of individuals who were examined :—Korkôri Bâhađa, Batra Billai, Takiri Bondâri, Kosalia Bhimadu ; other family names noted are Kûra, Bâgo, Thâla, Bishan, Nagabu, Benkiti, Ghorn, Mandi, Chêli ; other personal names are Nîro, Budra, Bakida, Sukkumon, Pôrya, Dhimabhandu, Godru.

Marriage Customs.—The Dômbis observe the general rule of Southern India. The children of a brother and sister may marry, and always do so, if it can possibly be arranged, as this is the "proper marriage" ; but the children of brothers, or the children of sisters, never intermarry. A man may marry the widow of his elder brother, but not of his younger brother. The family name already mentioned is called *vamsha* ; and no persons of the same *vamsha* can marry. The *tribe*, however, is endogamous ; a Païdi, for example, must marry a Païdi. The girl joins her husband's *vamsha* ; inheritance is through the father ; and it is *his* name that the children bear.

There is no limit to the number of wives ; and a man may have as many as he can support ; but the first marriage alone seems to involve a real ceremony. The headman of the caste people in the village arranges the marriages, and gives his consent ; and receives two new cloths after the ceremony from the father of the bride. Marriages are always arranged by the elders. The bridegroom takes a mat, a fan, and some saffron, and, followed by some of his relatives, goes to the bride's house. There the headman sees what he has brought. A new cloth is put on the bride, and her hands are joined in those of the bridegroom. A feast follows in the bride's house. Then all go to the bridegroom's house, where they wait until they have had three square meals.

The marriage of a second or third wife is sufficiently marked by a simple feast to the caste people. The bride may be older than the husband, but her age is not considered ; nor is it of any consequence whether she has attained puberty.

Fertility.—It was noted, in the case of individual No. 13, that there was an average of four children in the families of No. 13 himself, and of his three brothers and sisters. The largest family consisted of nine children, seven boys and two girls.

Religion.—I could learn but little of the religion of the Dômbis. Their chief god—probably an ancestral spirit—is called Kaluga. There is one in each village, in the headman's house. The deity is represented by a pie-piece, placed in or over a new earthen pot, smeared with rice and saffron powder. During worship, a silk cloth, a new cloth, or a wet cloth may be worn ; but one must not dress in leaves. Before mangoes are eaten, the first fruits are offered to the moon, at the full moon of the month *Chitra*.

Taboo.—Monkeys, frogs, and cobras are *taboo*, and also the *sumâri* tree (*Cassia fistula*), which bears a flower very like that of a laburnum. The big lizard, cobras, frogs, and the crabs which are found in the paddy-fields, and are usually eaten by jungle people, may not be eaten.

Death Ceremonies.—Of these also I could learn but little. The dead are either buried, or, in the case of a rich man, burnt; in the latter event, a feast must be given to the caste people. For cremation the dry wood of any tree, except the *sumâri*, may be used. When the deceased is a father, a mother, or a wife, the hair on the head, moustache, and armpits is shaved off on the sixth, eighth, or twelfth day after death.

Customs.—The *lunguti*, or small cloth worn over the groin by the males among the Hindus everywhere, is never worn among the Dômbis by men, but only by children. The hair is worn long; but of the hair on the face only the moustache is not shaved. Shaving is performed every eight days. Men are said to shave also the parts about the groin; but not the women, as is the general rule in Southern India. F. FAWCETT.

New Zealand.

Edge-Partington.

Note on the Matuatonga in the Art Gallery, Auckland, New Zealand.
Communicated by J. Edge-Partington.

30

Among the many collections made by the late Sir George Grey, and given to various institutions, there is a small but very interesting one in the Art Gallery of Auckland, N.Z. This collection contains perhaps the most sacred of all Maori relics



FIG. 1.



FIG. 2.

(fig. 1-2). It is a figure standing about sixteen inches high, representing a human form in a squatting position, with hands upon the breast. I am indebted to Mr. Josiah Martin, of Auckland, for the following note.

The image is a *Matuatonga*, or representation of the reproductive powers of nature, and is carved from a red volcanic stone foreign to New Zealand. It was given to Sir George Grey by the old *tohunga*, or priest, of the Island of Mokoia, on Lake Rotorua, under the following circumstances. The old man, finding that his

influence with the young people was being undermined by the Missionaries, sent for Sir George Grey, then Governor of New Zealand, and explained that this and other sacred relics had been brought by the Maori priest in the canoe from Hawaiki when the Arawa first landed on the island; these relics had been kept sacred and secret



FIG. 3.

none but the highest chiefs and the *tohunga* being allowed to see them; and works of healing and other miracles were said to be performed by their aid. In order to satisfy the desire of the people for an occasional glimpse of the sacred and mysterious emblem, a copy was modelled but of much larger dimensions (fig. 3). This figure is 4 feet 6 inches in height; it weighs about $1\frac{1}{2}$ tons, and is made of a rock found in the neighbourhood. This did not satisfy all the votaries, who enquired as to how so large a figure could have been hidden unde

the mat of the priest who had possession of it on board the Arawa canoe. The explanation was such an one as would under the circumstance be expected, that the figure, although at one time no bigger than a man's hand, had grown as the Maori race increased. The old *tohunga* asked Sir George to accept the charge of these precious relics, as the most terrible disaster would befall the Maori people should their gods (*Atua*) be profaned. Sir George took charge of the smaller relics, and advised that the large figure should have secret burial. This was done. Later, however, its

whereabouts becoming known, it was disinterred by some Europeans ; but by the order of the Government it was returned to the Maoris and reburied in its old site on the Island of Mokoia. J. E. P.

Tatuing : Pacific.

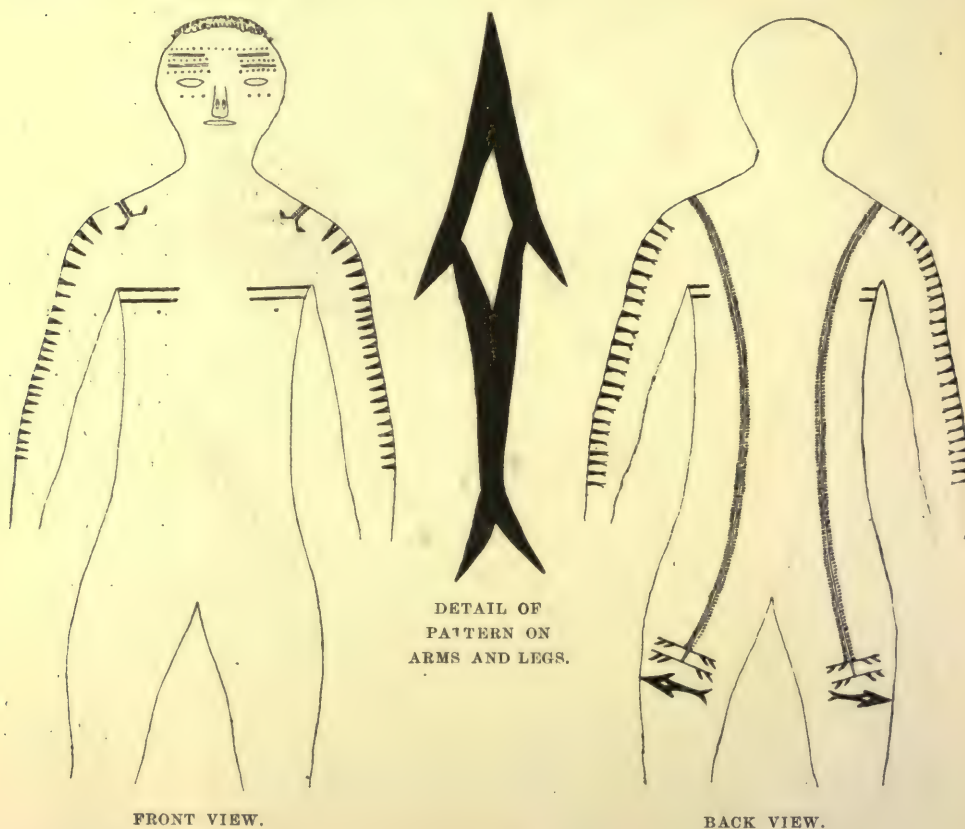
Woodford.

Note on Tatu-patterns employed in Lord Howe's Island. By C. M. Woodford.
Communicated by C. H. Read, F.S.A.

31

The following is an extract of a letter from Mr. C. M. Woodford, dated Tulagi, Solomon Islands, 5th November, 1900 :—

"I have lately paid a visit in H.M.S. *Torch* to Lord Howe's Group, or Ontong Java. I went there to hoist the flag, as it has been ceded to us by the Germans. I



send you herewith a sketch of the usual pattern of tatuing employed there. I sketched it from life, and it agrees almost exactly with a similar sketch I made fourteen years ago."

New Hebrides.

Edge-Partington.

Feathered Arrows from Espiritu Santo, New Hebrides. Communicated by
J. Edge-Partington.

32

Some years ago I purchased from a missionary resident in the Loyalty Islands some feathered arrows which he had obtained from a vessel trading in the New Hebrides. A selection of these I figured in my *Ethnographical Album*, 2nd Series, Plate 72. In the Catalogue of the Museum Godeffroy, Plate XXII., Fig. 9, a feathered arrow is figured as coming from the New Hebrides (?). I have lately been in communication with Mr. Charles Hedley, of the Australian Museum, Sydney; he has kindly furnished me with a short copy of a paper read by our Fellow, Mr. Norman Hardy, before the Linnæan Society of New South Wales, when he exhibited feathered arrows which he had himself obtained on the island of Espiritu Santo. He considers that these arrows are an indigenous production and without any foreign suggestion. The shafts, he says, are formed from a reed (*Phragmites communis*), the feathers are those of the common fowl and are set parallel to and bowed from the shaft, and are lashed on by narrow strips of smooth fibre, probably from the stem of the banana plant.

J. E. P.

REVIEWS.

Ontario.

Boyle.

Archæological Report, 1898. Being part of Appendix to the Report of the Minister of Education, Ontario. Printed by order of the Legislative Assembly.

33

Toronto, 1898. 8vo, pp. viii, 211 (including index). With 19 plates and 24 illustrations in the text.

Archæological Report, 1899. Being part of Appendix to the Report of the Minister of Education, Ontario. Printed by order of the Legislative Assembly. Toronto, 1900. 8vo, pp. iv, 199. With plans and illustrations in the text.

These Reports are the two latest of a series compiled by Mr. David Boyle, the curator of the museum at Toronto. They are records of the objects acquired from year to year by the museum, which under the wise policy of the Hon. Dr. Ross, formerly Minister of Education and now Premier of the Province of Ontario, and the skilful management of Mr. David Boyle, is rapidly becoming one of the most important on the North American continent. It is particularly rich in objects illustrating the culture of the Canadian aborigines. The systematic exploration of prehistoric sites under the direction of Mr. Boyle and a competent staff is not only increasing the wealth of the museum, but is adding year by year to our knowledge of the predecessors of the present population of the Province. The more remarkable of the objects obtained by these explorations are figured, with plans of the sites and views. These illustrations greatly augment the value of the Reports.

During the last two or three years a further step has been taken. Following the example set by the Bureau of Ethnology and several of the museums in the United States, an effort has been made to acquire and embody in the Report information as to the present state of the aboriginal populations in the Province. Mr. Boyle himself undertook the study of the pagan Iroquois. With the assistance of Mr. Brant-Sero, a Mohawk, and Ka-nis-han-don, a Seneca chief, through whom he was enabled to get a large number of details and ascertain the meaning of ceremonies he witnessed, he has produced in the Report for 1898 a most valuable monograph on the religion of the Iroquois as now practised. Iroquois paganism is not to-day what it was three centuries ago, before the Jesuit missionaries had penetrated into the Canadian wilds. Prophets

had at various times ere then appeared ; but they had effected little if anything towards raising their fellow-countrymen in faith or morals. The teaching of Christianity, however, proved a new and potent influence. Mr. Boyle adopts the view—and it is, I believe, the better opinion—that the Great Spirit, the Master of Life, was unknown to the American tribes until the white man set foot on their shores. The acceptance of the idea of the Supreme Being has introduced a new force into aboriginal religion. A succession of prophets has arisen in various tribes during the last two centuries, all of whom “have been consciously or unconsciously indebted to the white man very considerably for the tone and tenour of their teachings.”

The pagan Iroquois of whom Mr. Boyle writes follow the teachings of Ska-ne-o-dy-o, who received his revelation in the year 1790. The object of these teachings is to preserve the Indians free from contamination with white men. Mixed marriages, cards, drink, and European musical instruments and medicines are forbidden. Gambling according to native fashion is, however, encouraged. Certain religious festivals are enjoined. Stress is laid upon marriage, hospitality, and a high general morality ; so much so, says Mr. Boyle, “as to make one sometimes doubt the propriety of applying “the term ‘pagan’ to them [the Iroquois], although this name does not necessarily “imply anything disreputable.”

The author gives a detailed description of the Midwinter Festival, at which the White Dog is burned. The reason for the sacrifice of the White Dog is unknown. Mr. Boyle discusses the question without coming to any satisfactory conclusion. As at present observed, the animal is strangled and then thrown on the fire with a quantity of tobacco as a sacrifice to the Great Spirit, with prayers for various blessings, of which health, abundance, and content are the chief. Other festivals here described are the Spring Sun Dance, the Green Corn Dance, and the Feast of the Skeleton. An account of the important Society of the False Faces is also given, together with the myths relating to it. Nor are these the only important subjects dealt with. Among others may be mentioned as of special interest, the Gentile organisation and government of the Iroquois, their music, their personal names, and the origin and meaning of Niyoh, the word now used for God.

Iroquois music is further described in the Report for 1899. Graphophone cylinders have been used to take down the songs. These have been reduced to our notation by Mr. Cringan, and are given, to the number of 47. Still more interesting is Mr. W. E. Connelly's article on the Wyandots. It contains a careful account of the clan system from the oldest records to the present day, and of Wyandot government and proper names.

This bare enumeration by no means exhausts the interest of the Reports. It is sufficient to indicate their value to anthropologists. Special reference, however, should also be made to the excellent reproductions in the Report for 1898 of photographs of the Iroquois, both individuals and groups, and of their dwellings. They are a fine, intelligent looking people, some of them even handsome according to European standards.

In the publication of these valuable Reports the Government of Ontario is giving a lead to the Colonial Office of the Imperial Government. Enlightened statesmanship demands something more than the annual publication of statistics of trade and police.

E. SIDNEY HARTLAND.

[N.B.—By the courtesy of Mr. Boyle, and of the Honourable Richard Harecourt, the successor of Dr. Ross as Minister of Education in Ontario, a limited number of copies of these Reports have been placed at the disposal of the Anthropological Institute, and may be obtained by students on application at 3, Hanover Square, London, W.—ED.]

Asia.

Futterer.

Durch Asien, Erfahrungen, Forschungen und Sammlungen (Band I. Geographische Charakter-Bilder). Von Dr. K. Futterer. With 203 Illustrations in the Text, 40 Plates, two Coloured Plates, and Map. Berlin, Reimer, 1901, pp. xxv, 545. Price 20 marks. **34**

Dr. Futterer, Professor of Geology and the allied studies in the Grand-Ducal Technical High School at Karlsruhe, gives us in this stout volume of 570 large octavo pages, the first fruits of the great Asiatic expedition of 1897-99, which was conducted by his friend Dr. Holderer of Heidelberg, and in which he took part as geologist, geographer, anthropologist, and general historian. Even the natural history department fell largely to his share; most of the flowering plants from the Gobi Desert were collected by him; the unbroken record of daily meteorological observations from Russian Turkestan to Shanghai, together with numerous determinations of altitudes and latitudes are amongst the more important results of his untiring energy, and of a fortunate arrangement with the leader of the expedition, by which our author was enabled to devote most of his time to exclusively scientific work. The rich and extremely diversified materials thus collected along a route extending from the Caspian Sea to the Pacific Ocean will ultimately form the subject-matter of three uniform volumes, the contents of which are thus distributed: I. Geographical descriptions, incidents of travel, natural history, and ethnographic details, illustrated by numerous reproductions of photographs, nearly all taken by Dr. Futterer himself; II. Geological observations and the discussion of the more important general problems suggested by them; III. Essays on the meteorological, palæontological, zoological, and botanical results of the expedition.

Of this encyclopædic programme most of our readers will be mainly interested in that section which has already appeared, and is comprised between the two covers of the volume under notice. Here has been brought together a great quantity of valuable ethnological matter carefully collected from regions which are seldom visited by good observers, although presenting many points that are attractive to the anthropological student. This will be at once apparent when it is stated that the route followed by the expedition traversed the whole of Western (Russian) and Eastern (Chinese) Turkestan, skirted the northern and more thickly inhabited districts of the Tarim (Lob-nor) basin, penetrated eastwards to Hami (Khamil), crossed the Gobi wilderness from this place in a south-easterly direction to the Kuku-Nor province of North-eastern Tibet; here struck again eastwards over the Ala-shan range into Kansu; thence to Si-ngan-fu, earliest seat of the Chinese race in the Wei-ho valley, and so on through the heart of China (just before the present troubles) to the great city of Han-kow, and down the Yang-tse-kiang to Shanghai. Thus were offered and largely utilized endless opportunities of studying in their homes a great number of peoples, such as the Turkomans, the Usbegs, the Tajiks, Sartes, Galchas, Kirghizes, Dungans, Taranches, Kashgarians, Kalmaks, Eastern Mongols, Tanguts, and Chinese peoples, showing collectively almost every imaginable shade of transition between the two great Caucasian and Mongolic divisions of mankind. Unfortunately, owing to the lack of interpreters, and the coyness or superstitious fears of the aborigines, especially in the more remote eastern lands, the attempts to procure anthropometric data mostly proved abortive. Hence the accurate measurements, which are here conveniently tabulated in the appendix, are mainly confined to the Central and West Asiatic peoples, including various groups of Kirghizes, Sartes, and Kashgarians. But these measurements extend in some instances to such minute details—colour of exposed and covered parts, cranial and pelvic indices, length of the extremities, of femur, tibia, digits, nails, texture of the hair, shape, position, and colour of the eye, and so on—that they may be fairly described as exhaustive. In fact, so far as

regards their physical characters certain natives of Chinese Turkestan are now better known to science than perhaps any single inhabitant of these islands. In other respects, also, the picture is often very complete, and we learn, for instance, that the term *Sart* appears to have no ethnical value, though this was no doubt already known in a general way from other sources. The information on this subject embodied in the text is supplemented in a note by further particulars from F. von Schwarz's valuable work on *Turkestan* (Freiburg, Baden, 1900). Although not without historic significance, *Sart* denotes at present little more than the settled as distinguished from the nomad populations in Ferghana and surrounding lands. Those more specially so designated are the mixed Aryan (Galcha) aborigines of the secluded upland valleys of the Oxus, many of whom, as we learn from Ch. de Ujfalvy, still speak archaic forms of the old Aryan stock language. But the word has a wide range, and now comprises not only the majority of the inhabitants of the towns and villages in Russian Turkestan, but also numerous communities in the Tarim basin, in Kashgaria, Bokhara, North Afghanistan, and Semirechinski-krai. Most of the so-called *Usbegs*, who have abandoned the nomad life and intermingled with the primitive Aryan peoples of these regions, are scarcely to be distinguished from the *Sarts* and the closely-allied *Tajiks* of Persian speech. But miscegenation of long standing prevails everywhere in the Western and Central lands, where the Mongol element is chiefly betrayed by the almond-shaped oblique eyes, while "the farther they recede eastwards the nearer do the tribes approach the genuine Mongol type, indicated by a lower stature, broader face and mouth, flatter nose, and scantier beard." The same phenomenon, which is here well illustrated by reproductions of several of the photographs taken by the author, was observed by Captain Younghusband, who, advancing from the opposite direction, remarks that "as I proceeded westwards I noticed a gradual, scarcely perceptible, change from the round of a Mongolian type to a sharper and yet more sharp type of feature. . . . As we get further away from Mongolia we notice that the faces become gradually longer and narrower" (*The Heart of a Continent*, p. 118). Hence, when the expedition reached the Koko-Nor district of North-east Tibet, it found itself surrounded by races of distinctly Mongol type. Here the dominant people are the *Tanguts*, who are fully described and recognised with *Prjevalsky* and *Rockhill* to be a characteristic branch of the *Tibetan* family. Amongst these wild predatory tribes *Dr. Fütterer* met with a more friendly reception than most of his predecessors. They willingly accompanied him in his frequent excursions off the main route, took an active part in the work of collecting, and became quite expert in discovering geological specimens, even in localities where the explorer has himself failed to find any.

Students requiring to consult this storehouse of anthropological lore will be grateful to the author for a more copious index than is usually supplied to German works of this character.

A. H. KEANE.

India: Bibliography.

Campbell.

Index-Catalogue of Indian Official Publications in the Library of the British Museum. By Frank Campbell. 1900. London, Library Supply Association. 35 4to, pp. . Price 42s. nett.

The size of the catalogue, which has been compiled by Mr. Frank Campbell (late of the British Museum Library), and represents the labour of 13 years, is a fair indication of the enormous mass of Indian literature which now exists, as it is also a measure of the difficulty which besets any ordinary "reader" in extracting the special

document which he may require to illustrate any particular subject, unless he is fully posted both in the name of the originating department and in the exact title of the work. It is hardly necessary to emphasize the value of the assistance thus afforded by Mr. Campbell's catalogue, although it is (necessarily) incomplete, and does not claim to represent even the whole of the British Museum collection. What it does claim is to provide a reference for "the more modern portion of the collection of Indian official publications issued in India subsequent to the mutiny, so far as the documents have been deposited in the library of the British Museum." "Reports issued as 'English parliamentary papers' are not included except in rare instances, but there is a considerable representation of Departmental Reports issued in London in connection with the India Office." Works of a semi-official nature have also been included in certain instances. From a casual glance at the contents it would certainly appear that Mr. Frank Campbell's work is sufficiently comprehensive to be a most valuable index to Indian literature generally, and that he has earned the thanks not only of the casual reader, but of many Indian officials for a work which will lighten their labour considerably.

T. H. HOLDICH.

New Guinea.

Fellows: Le Hunte.

Despatches from His Excellency the Lieutenant Governor of British New Guinea. No. 28 (14th April), No. 35 (25th April), No. 36 (1st May), and **36** No. 44 (21st June) of 1900.

The first of these despatches (No. 28) encloses the following account by the Rev. S. B. Fellows, of the *Kabilula*—Atonement or Peace-making Ceremony—of the Natives of Kiriwina (Trobriand Group), who were lately at war.

"Atonement or Peace-making Ceremony of the Natives of Kiriwina.—Taolu came to ask me to accompany him on the morrow to the Kabilula. We arranged to meet at the inland village of Obweria. I was there early, and about 9 o'clock Taolu arrived with a numerous retinue, all fully armed with spears and shields and long knives. Taolu carried no weapons, but I noticed that in addition to the ordinary ornaments by which a *Guiau* is distinguished, he was also wearing the sacred emblems of royalty—the armlets and wristlets previously held by Enamakala and his predecessors for many generations in the office of supreme *Guiau* in the ruling *Labai* family of Kiriwina. As Obweria was the first village in Tilataula territory entered by Taolu, he was here formally received by a Tilataula chief. This man, named Kunoï, rushed into the centre of the village, and gesticulating like a madman, never once looking at Taolu, but addressing him, and him only, all the time. In effect, he said: 'Taolu, we are glad to see you. We acknowledge you as our *Guiau*, in succession to Enamakala. We have had enough of fighting, and everything is ready for making the atonement to-day. All the Tilataula chiefs are waiting for you at Kabwaku. Let us go and make peace. Then come back and live in your village, Omarakana, and rule the country as a *Guiau* should. Make peace and keep the peace; put away all the spears so that there be no more war.' Then striking his forehead with the palm of his hand—the usual pledge of a chief that he would defend from danger—he made a leap to where Taolu stood, grasped his hand, and drew him to the path leading to Kabwaku. As a dramatic performance, Kunoï's action was perfect; its effect on the men standing round was electrical. They simply roared out their acclamation to the *Guiau*, and shouldering their spears, they crowded pell-mell into the narrow track after their leaders. Beyond the village the procession was marshalled. A band of warriors took the lead, headed by a sorcerer, who, with his continuous incantations, cleared our path of all evil spirits. Following these came about twenty

women, carrying on their heads the appeasing gifts for the *Kabilula*, then the chiefs with more warriors, and behind came the crowd.

"Going in single file the column stretched out to a great length. At frequent intervals a wave of cheering ran down the line. The excitement increased as we went along, and reached its climax in deafening acclaim as we entered Kabwaku, where Taolu was welcomed by Moliassi in fine dramatic style. This was a proud day for so young a chief as Moliassi; and he was equal to the occasion. In the *Kabilula*, equal presents are given and received on both sides, but the defeated chief, after seeking and receiving permission, has to come to the village of his conqueror, and there make his offering of atonement.

"A clear space was quickly made in the middle of the village in front of Moliassi's house. The multitude of armed men with their spears in their hands eagerly crowded round. At one end of the rough circle stood Moliassi, stern and silent, surrounded by other chiefs of his side; at the other end Taolu and his friends were busy unpacking their things. The proceedings were opened by Taolu rushing into the ring and carrying aloft a valuable armlet which he laid on the ground, at the same time crying out in a loud voice '*Kam lula, Moliassi*' (thy atonement, Moliassi). He immediately turned and retired, and the armlet was instantly snatched up and handed in by one of Moliassi's men. Again and again Taolu repeated this performance, each time bringing only one *vaigua* (article of wealth) and calling out the name of the chief to whom he was giving it. Some of his friends also did the same. In this way between thirty or forty different *vaigua*, consisting of armlets, old stone tomahawks, necklaces of native money, &c., &c., were presented and received. Then Taolu ran in and made a speech to Moliassi and his people, simulating furious passion as he sprang from side to side of the circle, and swung his arms about in energetic gestures. He addressed them as *Bodagua* (my younger brothers), and said, 'I am weak to-day through the death of my elder brother, Enamakala. Had he been alive to-day he would have brought more *vaigua* than you have men. I have brought you my own *vaigua* as your *lula*; let that suffice. We are living in the bush, permit us to return to our villages. Put away your spears and let us work at our gardens that there may be plenty of food for ourselves and our families.' Then Moliassi and other Tilataula chiefs began to present the return *lula* to Taolu. In the same manner, one by one, article for article, they laid down the exact equivalent of the *vaigua* they had received. After this they made their speeches, all of them definitely accepting Taolu as their *Guiau*.

"One old chief, Mosituli, told Taolu that this had been a young men's war and so the *Kabilula* was held in a young chief's village. A young chief, Meiosoalu, the right-hand man of Moliassi, said that though he was young when Enamakala and his men had driven his people out of their village, he remembered the death of his relatives and the burning of his home. It was to take the *mapula* (payment) for this that he had fought, but the present *Kabilula* settled all.

"An attentive hearing was given to my address, but the united yell at the end might easily have startled anyone not used to the noisy style of Kiriwina natives. I pleaded the claims of law and order and religion.

"Then Taolu made his way into the midst of Moliassi's men, and, holding high a stick of tobacco, he called out, 'Which of you will take this tobacco and distribute it so that we may smoke a pipe of peace together?' Twenty eager hands were stretched out to grasp it. With the acceptance of this tobacco the *Kabilula* was completed, and the ceremony concluded."

No matters of anthropological interest are contained in despatches No. 35 and 44, but No. 36 contains the following:—

"Notes on the Tribes of the Morehead River.—The tribes met with on the Upper Morehead are named Sanana, Tugari, and Pirará, after the names of their villages.

They are apparently subdivisions of the Babiri tribe. Indications point to the probability that their populations were comparatively much more numerous than at the present day. Without doubt their numbers have been diminished by the frequent onslaughts of the Tugeri tribe from Dutch New Guinea; but these depredations have forced them to scatter, and it was not possible to arrive at so much as an approximate estimate of the population during a flying visit.

"In stature these natives are of a slightly taller average than the so-called Bugi tribe (see below). Their muscular physique is also superior to that of the latter people. The men, for the most part, go stark naked, but some of them wear a grotesquely large pubic shell, which, however, is as often to be seen hanging at the side or at the back as in its proper position. The hair is curly, and generally worn in thin plaits, into which is woven some vegetable fibre. These fibres extend below the limit of the hair and depend gracefully more than half-way down the back and over the shoulders. The hair is shaved from off the upper part of the forehead. There septums of their noses are invariably pierced, and many of them in addition (particularly the Pirará natives) have large holes punctured vertically through the nostril. There was a noticeable scarcity of body ornaments among them. In no case that came under notice was anything worn in the nose. They vary in colour from a dark copper to black. Their facial features differ to such an extent that no characteristic type could be detected. Some have pinched crabbed features, while others have a fine and gentle yet strong countenance, and between these two several others approaching one or the other extreme were observed. The older men wear beards, which are neither trimmed nor cut.

"The women, of whom only three were seen, wore petticoats of grass. Their hair was cut moderately short.

"A short vocabulary of their common language was taken, which may be useful as an addition to that taken by Sir William MacGregor. The name given by these people to the Morehead River is Totogaba."

N.B.—The Bugi tribe (above mentioned) consists now of the remnants of the original mainland tribe of that name, the Wasi tribe from Strachan Island, and others whose persecution by the Tugeri invaders has induced them to gather together for refuge at Bugi, where they have protection under a small detachment of armed native constabulary.

S. H. RAY

France: Reindeer Period.

Girod and Massénat.

Les Stations de l'Âge du Renne dans les Vallées de la Vézère et de la Corrèze. Documents recueillis et publiés par Dr. Paul Girod et Etie Massénat. **37**
Laurerie-Basse; Industrie, Sculptures, Gravures. Paris, J. B. Baillière et fils, 1900.
4to, pp. viii + 101, with 110 plates and 42 pp. of explanation.

For some five-and-thirty years M. Massénat has been a diligent explorer of the caves and rock-shelters in the valleys of the Vézère and the Corrèze. Preliminary notices of his work have appeared from time to time, but no detailed and systematic account has yet been published. His very extensive collection is now in the care of Prof. Girod, of Clermont Ferrand, who has co-operated for many years with M. Massénat. They believe that the time has come for the preparation of a complete work, dealing exhaustively with the subject; and they accordingly propose to issue a series of monographs describing all the stations which they have explored and all the objects which have been collected. The volume before us is the first of the series. It is devoted to the station of Laurerie-Basse, a locality of singular interest, inasmuch as it presents a typical illustration of the life and industry of the Magdalenian age.

As this is the first instalment of the great work which it is proposed to publish, it contains some preliminary matter of a general character, including a brief survey of the prehistoric remains throughout the valleys of the Vézère and the Corrèze. About 1860 Jouannait found worked flints in certain caves in Dordogne. But as far back as 1842 the College of Brive had acquired the natural history cabinet of the little College of Azerac, and it was found that this collection contained a number of objects worked in flint and in reindeer-antler, together with reindeer bones, evidently of local origin, but without any record of their discovery. A new epoch in the history of archaeological work in Périgord was opened up, however, in 1862, when Edouard Lartet had his attention directed to the Dordogne caves through some specimens sent to Paris by Abel Laganne, of Les Eyzies. Everyone knows how Henry Christy threw himself into the work, conjointly with Lartet, and how the results were eventually given to the world in the famous *Reliquie Aquitanicæ*.

It was about 1865 when M. Massénat commenced his researches by investigating some stations on the Corrèze, whence he proceeded to the stream of Planchetorte, where his work was carried on partly in association with Philibert Lalande. Passing on to the Vézère, he set himself to explore patiently and systematically many of the stations which had previously been subject to only hasty examination. From his wide knowledge of the relics of the so-called "Reindeer Age" he is led to recognize three epochs corresponding with those of de Mortillet, but named according to the typical stations. Instead, therefore, of the terms "Magdalenian," "Solutrian," and "Mousterian," he uses respectively the terms "epoch of Laugerie-Basse," "of Cro Magnon," and "of Le Moustier."

The station of Laugerie-Basse was originally explored by Christy and Lartet, and by de Vibraye; but M. Massénat has perseveringly continued the work in a most detailed and careful manner. The results are fully set forth in the present work. The wealth of material discovered at this station is illustrated by no fewer than 110 quarto plates, lithographed by Dr. Girod, representing a great series of implements in flint, quartz, ivory, and reindeer-antler, together with a number of interesting engravings and sculptures of the Reindeer Age.

F. W. RUDLER.

Savoy : Ethnology.

Pittard.

Note Préliminaire sur l'Ethnologie de la Savoie et de la Haute-Savoie.

Eugene Pittard. (Extract from *Le Globe*, Genève, June 1900.)

38

This note is intended to indicate the present state of the author's investigations into the Ethnology of Savoy, and to express the conclusions he has so far arrived at, subject to revision in a larger communication to be subsequently made in collaboration with Dr. J. Carret. M. Pittard shows that palæ-ethnologists have found that a brachycephalic group inhabited the lake dwellings of Savoy in the early polished stone period, and were displaced in whole or part by a dolichocephalic people who also lived as lake dwellers. Towards the end of the Bronze Age, this part of Europe was invaded in force by a brachycephalic population from across the Alpine passes. The author describes the ethnic distribution in Savoy as based on Lagneau's researches, deals briefly with the Burgundian invasion of the 5th century of our era and with the Saracen occupation, and passes on to craniological evidence. M. Pittard having studied 165 skulls from this neighbourhood, finds they fall into two definite groups, a dolichocephalic of 15 and a brachycephalic of 126 crania respectively. The brachycephalic skulls being also leptoprosopic and leptorhine are closely allied to those of the Valais, the Grisons, and Auvergne. The dolichocephalic group, relatively so feebly represented, is regarded as Burgundian. At first sight it would seem that among the present population of Savoy brachycephaly is associated with short stature and with relative *blondness*.

F. C. S.

ORIGINAL ARTICLES.

East Africa.

With Plate D.

Sharpe.

A Carved Stool and other objects from British East Africa. Communicated by Alfred Sharpe, C.B., Assistant Commissioner of Uganda.

39

The three objects described below were obtained by Mr. Alfred Sharpe, C.B., Assistant Commissioner of Uganda, were exhibited on his behalf at a meeting of the Anthropological Institute on November 27th, 1900; and have been presented by him to the British Museum. The following brief account of them is compiled from the objects themselves, and from memoranda supplied by Mr. Sharpe:—

No. 1 is a stool of soft white wood, artificially blackened on the surface. It is 25 inches high, and consists of a squatting female figure resting on a plain, solid, circular pedestal, and supporting with upraised arms a plain circular seat, the upper surface of which is slightly concave. The female figure is remarkable for the elaborate representation of prominent cheloid ornaments on the flanks and abdomen, and for the peculiar treatment of the hair, which is well shown in side and back view. (*Plate D.*)

The stool comes from the district immediately west of the Luapula or Lualaba river, immediately after its exit, towards the north, from Lake Mweru. The natives there constantly make these stools, of different sizes and patterns. Mr. Sharpe adds that he has seen some beautifully carved ones at the trading station of the African Lakes Corporation at the north-east corner of Lake Mweru.

No. 2 is a double gong, 16½ inches high, of peculiar form, hammered together out of two thick sheets of soft iron. It has no clapper, and was, apparently, intended to be struck from without. It comes from the town of Kazembe, just south of Lake Mweru. Kazembe's is one of the oldest known "dynasties" in the southern half of Central Africa. Dr. Livingstone, when at Kazembe's, traced back a number of generations of "Kazembes," each succeeding chief being called by the same name. A Kazembe was in full swing at the time of Lacerda's journey in 1797 (*see* Burton's *Land of the Cazembes*, p. 4); and when there in 1890, 1892, and 1899 Mr. Sharpe saw abandoned sites of several old towns of the Kazembe's. Kazembe, the present chief, told Mr. Sharpe that his ancestors came from *Mwata Yamvo*, on the Kasai. Many of the customs at Kazembe's are more similar to those of the west of Africa than to those of the eastern half of the continent. The natives say that these bells are not made now, and that they are very old. Mr. Sharpe saw two or three of them.

No. 3 is a perforated stone object like the head of a hammer or mace. It is 6½ inches long, 3 inches broad, and 1½ inches thick. This object comes from the "Mambwe" country, which lies near the south end of Lake Tanganyika, 2,000 feet above the lake, and 5,000 above sea level. The natives find these objects in the ground, but do not know their origin, and call them *miala ya mlunga*, i.e., "Stones of God," meaning "supernatural stones." They are sometimes round, instead of oval, and sometimes larger, sometimes smaller, than this example. Similar stones were found by Theodore Bent at Zimbabwe, and there are similar stones in the Gizeh Museum at Cairo, which were taken from Egyptian tombs of early date. Mr. Sharpe knows of no other localities in Africa, except those mentioned above, where these stones are found.

Egypt: Prehistoric.

Randall-MacIver.

A Prehistoric Cemetery at El Amrah in Egypt: Preliminary Report of Excavations. By D. Randall-MacIver, M.A., Laycock Student of Egyptology at Worcester College, Oxford.

40

The village of El Amrah lies about six miles to the south of the famous site of Abydos, where Professor Flinders Petrie has for the past two seasons been engaged in

unravelling the difficult history of Egypt's earliest kings. It has been known for some years that valuable prehistoric cemeteries existed in the neighbourhood, but their precise character could hardly be appreciated, inasmuch as nothing had been published which could be called a record of the excavations made there. It was with some anxiety that Mr. Anthony Wilkin and I, to whom Professor Petrie entrusted this part of the concession granted to him by the Department of Antiquities, commenced our season's work. A site which had been already dug no less than four times, first by native plunderers, and then by professed archaeologists, might well have been supposed to be entirely exhausted. I am happy, however, to be able to state that our success has far surpassed our modest expectations, and purpose in the following pages to give a brief *résumé* of results which will soon be published in full in the official memoir of the Egypt Exploration Fund, at whose expense the work is being conducted.

The cemeteries on which we have been engaged are situated close to the cultivation



FIG. 1. CLAY MODEL OF A HOUSE.

on the table-land, between two wide valleys which run down from the upper desert a short distance north of El Amrah. Here a tract of many acres of broken ground testifies to the cupidity, if not to the knowledge of previous grave-hunters. At the south-west corner sherds of broken pottery showed that many at least of the graves were of

prehistoric date, and it was at this point that we began to excavate on December 22nd.

It soon became evident that a large number of graves had not been opened, while others had been insufficiently cleared. After a month's work three hundred graves had been fully registered from a piece of ground measuring only about 15,000 square yards. This proved to be the entire extent of a small but highly interesting prehistoric cemetery, which may have originally contained some 600 or 700 graves. In date it ranged from the very earliest "New Race" times



FIG. 2. CLAY MODEL OF KINE.

through the entire middle period down to the beginning of the "Late Prehistoric." The graves yielded not only a great quantity of the objects familiar to all who have studied this period (pottery,

ivories, slate palettes, &c.), but also a certain number which are wholly new in character. The most interesting are those which bear directly upon the life of the people who lived in the country at that time. In the rubbish of a plundered grave was found a fragment which evidently represented a house, the next day more pieces were turned out which fit well together and almost complete the whole. The house (shown in fig. 1) is oblong in shape, sloping back from the base and recurved at the top. From its form it may be supposed that it was

built of wattle and mud; at one end is depicted a door (probably of wood), and at the other two small windows. No roof was found, but if it is permissible to judge from the construction of graves which occur in our second cemetery, it must have consisted of boughs on which was laid a wattle-work of twigs covered with mud.

The "New Race" had probably even more occasion to use boats than the modern Egyptians, for there is no doubt that the country was far more swampy then than it is now. It is thought that some of these boats are represented on their well-known "decorated" pottery. In our first cemetery were found pottery models of two, if not three, different kinds, but they do not resemble those figured on the pottery. Again, that the "New Race" were a hunting people has long been known from their

carvings and drawings, as well as inferred from the objects which occur in the graves. But it must now be added that they were a pastoral people; for in no less than three graves were found pottery groups of kine. The grave from which the best group came (see fig. 2), was that of a man who held in his hand a model baton of clay, the stem of which was painted with a spiral red band like a leather thong, while the head of it was in the form of a mace and decorated with black lines; some fine pottery completed his tomb-furniture. Of weapons of war and the chase figs. 3-11 will give a fair idea. The breccia axe (fig. 3), the mace-heads (figs. 4-6), and the forked hunting-lance of flint (figs. 7-11) all came from the same grave, which, indeed, contained five of these lances, a remarkable outfit at a time when they must have been very rare and costly. The weapons and implements in these graves are generally of stone. Copper is always rare, though occurring occasionally even in the earliest stage of the prehistoric. Fig. 12 shows a new type of copper dagger found in a plundered grave of the middle Prehistoric period. Flint implements of one class or another occur in almost every grave, though the fine

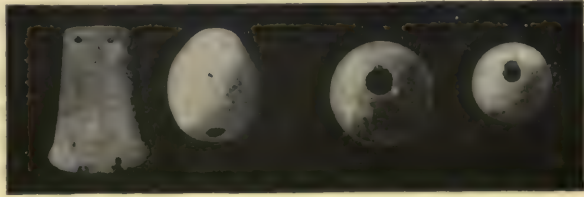


FIG. 3. CELT.

FIGS. 4-6. MACE HEADS.



FIGS. 7-11. FORKED HUNTING-LANCES OF FLINT.

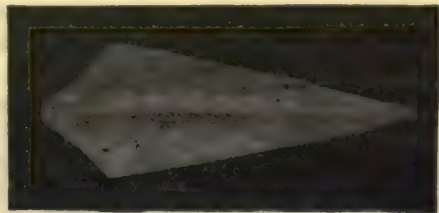
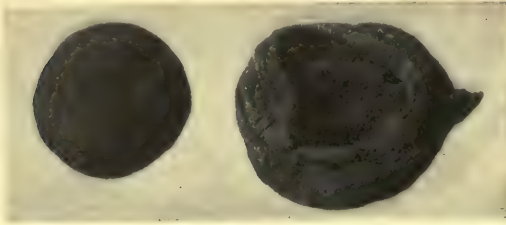


FIG. 12. DAGGER OF COPPER.

specimens are, of course, uncommon. In several cases a small sheaf of flakes has been found lying between the hands and head; and one grave, from the number and variety of the flakes and implements found in it, would seem to have been that of a professional flint-knapper.



FIGS. 13-14. BASKETS.

Other crafts are represented by the excellent cloth used to wrap round the body, by baskets such as those shown in figs. 13 and 14, and by clay bases which probably served in the manufacture of pottery. With regard to the pottery itself this cemetery yielded a considerable

number of new varieties and one quite new class of ware.

The dolls shown in figs. 15 and 16 may be taken to represent the inhabitants of the country, to such extent at least as their artistic skill could interpret their own conceptions. It is worth remarking that the peculiar "sheath" which they wear, and the strongly-curved hair, are the essential features of the figures carved on the splendid proto-dynastic slates (*Journ. Anthr. Inst.*, xxx, Pl. B., C., D.).

After this cemetery was finished, another was started some two or three hundred paces to the east of it. The ground between is full of 18th dynasty burials, and it appears at the moment of writing as if the two pre-historic patches were quite separate and independent.

The eastern cemetery is of very comprehensive character. It begins with burials of almost, if not quite, the earliest type, and continues down to the 1st or 11th dynasty. In comparison with the other cemetery it has not been much plundered. Up to the date on which this is written (February 17th) rather more than 100 new graves have been opened. One of these has produced the most valuable find of the season, namely, a slate palette which is conclusively dated, by the pottery and stone vases occurring with it, no less than by its own characteristic form,



FIGS. 15-16. CLAY DOLLS.

FIG. 17.
HIEROGLYPHIC.

to the middle period of the Prehistoric (60 in Prof. Petrie's sequence-datings). It bears in relief upon the face the brief inscription given in fig. 17, and is thus by far the earliest example yet found of the use of hieroglyphs. Hieroglyphic writing has been known to exist in a well-developed form as early as the 1st dynasty, but this slate belongs to a period considerably before Menes, the first king of the 1st dynasty.

An especially interesting point in connection with the eastern cemetery is that the range and variety of the burials have made it possible to trace the evolution of all the types of early tomb-construction. The bodies

are invariably buried in a contracted position, and the stages through which the tomb developed may be provisionally stated as follows: the first stage is the only one which has not yet been noted in this part of the ground, though it is of frequent occurrence in the western cemetery:—

1. The earliest burials of all are in very shallow round graves. The body was generally wrapped in the skin of a sheep or goat.
2. These are succeeded by graves several feet deep, and of a roughly oval or oblong shape. The body was commonly wrapped in cloth and laid on a reed mat, which was then folded round it. Sometimes the reed mat was further laid on a tray of twigs, and very rarely on a wooden dug-out bier.
3. Graves of the same depth as the last, in which the beginnings of a slight recess occur, in which the body is laid; while the larger pots are outside the recess.
4. Graves 5 or 6 feet deep, with a well-marked recess cut out for the body. The recess is sometimes fenced off by upright wooden baulks.
5. A regular pit, about 6 feet deep and 2 to 3 feet in width, with a recess bricked off from it. The recess contains a clay, a wooden, or a pottery coffin, either oval or oblong, and one or two pots, which are almost the only tomb furniture found with this class. Such graves are very late in the prehistoric series, approaching closely to the period of the 1st dynasty, or even entering into it.

From this point the solution branches off into two distinct lines. The pit with chamber becomes the regular well with chamber, a type which prevails from the IVth dynasty onwards all through Egyptian history. On the other hand the bricked recess, considered in itself apart from the well or pit, becomes the brick tomb which forms our sixth stage.

6. Four-sided tombs, consisting of brick walls sunk a few feet below the desert-surface. At first these contain a coffin either of mud or of wood. Sometimes the coffin is replaced by a plank lining fastened against the walls; this feature has been found also in Prof. Petrie's Royal Tombs of the 1st Dynasty. Sometimes, again, there is no coffin, but the body is wrapped in cloth and laid on a reed mat as in the earlier graves.

N.B.—The burials under inverted pots which frequently occur in this cemetery do not fall naturally into any stage of the tomb development. They should perhaps be regarded as cheap varieties of the pottery coffin.

The first stage in the history of this brick construction is a plain four-sided enclosure, larger or smaller according to the importance of the grave. The smaller graves are covered with mud bricks supported on more piles of bricks built up from the floor. For the larger a regular roof is made of unbarked boughs or trunks of trees of 2–4 inches diameter laid across the width of the grave. On these is then laid a wattlework of twigs or reeds, and the whole then covered with several inches of plastered mud.

7. A natural development of such graves as those of the sixth class ensues when niches are walled off to receive the offerings put with the deceased person. First of all a small dividing wall is built at one end or the other, thus barring off a small section of the whole length.

Next, this section is itself divided by a small cross-partition, so as to form two niches. A greater elaboration still is reached when more niches are inserted in other parts of the tomb, and thus a natural progress is made to the complicated arrangement of the Royal Tombs of Abydos. The most detailed arrangement that has yet been found at El Amrah was that of a large brick tomb which has just been worked. It was a large room about 5 feet deep and 5 feet below the surface of the ground, with two

chambers at the south end for offerings, and a third chamber at the north-east corner for the body of a cow. A staircase 24 feet long gave entrance to the tomb from the western side. From this tomb, which had been plundered very recently, we obtained fragments of fine stone vases, and half of a beautifully-inscribed steatite cylinder.

DAVID RANDALL-MACIVER.

Siam : Celadon Ware.

Lyle.

The Place of Manufacture of Celadon Ware. By T. H. Lyle.

41

The following are extracts from a letter from Mr. T. H. Lyle, 1st Assistant, Consular Service, Siam, to Mr. Thomas Boynton, F.S.A., of Norman House, Bridlington Quay, Yorks. The letter is dated "H.B.M. Consulate, Nan, *via* Moulmien, May 12, 1900" :—

"I have not been entirely forgetful of my promise to try to obtain for you a perfect specimen of Celadon ware. I am sorry to say that my efforts have been unsuccessful; but having had the opportunity to inspect the kilns where this ware was manufactured, I fancy you may be interested to have an account of my visit. These kilns are situated in a province of Siam, known as Sawankalok, possessing a capital of the same name, on the River Mee Yome, distant north from Bangkok more than 200 miles. This Sawankalok, according to Siamese history, was an old-time capital of Siam, and must have been possessed of a highly cultured and artistic population, as the imposing ruins of numerous magnificent temples testify. A friend and myself rode together from Sawankalok up the River Mee Yome for a couple of hours before arriving at the district which we desired to inspect. The road was simply a track through jungle and forest, and followed the course of the river. At a convenient shallow, we crossed to the west bank, and plunging straight into the jungle, were conducted to a large mound, 50 or 60 yards from the river bank.

"The whole district is a mass of forest and undergrowth, and as—at first sight—one perceived merely large trees and vegetation springing from a slight rise in the ground, one's natural impulse was to ask 'Where are the kilns?' That question speedily solves itself. These mounds, which average 20 to 30 feet in height, and vary from 60 to 100 feet in circumference, consist of bricks, pipes, earth, *débris*, and broken pots. Everywhere the ground is strewn with fragments of pottery; one could gather sufficient to macadamise the roads of all Bridlington, but there is hardly a piece as big as this sheet of paper [5 ins. x 7 ins.], and a perfect specimen does not exist. The mounds or kilns number several hundred; many of them are so overgrown as to be almost unapproachable. They stand in a close double line, at intervals of 20 to 40 yards, for over four miles. The hundreds of people who, at one time, found employment in these manufacturies are vanished; countless fragments of pottery are the only relics of this once high-class industry. We had a number of men with us, and diligently hunted and dug amongst one or two of these 'scrap-heaps,' though our efforts were only partially successful. One or two badly-damaged specimens and wasters came to light, the most perfect find being three or four white glazed tiles. Local officials, learning of my desire for this pottery, gave me one or two pieces in fair condition which I now have by me.

"The manner of digging, no less than the tools employed, and the lack of enthusiasm amongst the natives, render it very difficult to do any systematic excavation in these mounds. Each man scrapes away with his hands, after loosening the earth with a 'spade' rather bigger than a tablespoon. My visit took place in the hottest of the dry weather, when the ground is parched and burnt almost to brick, and several battered specimens were hopelessly cracked and spoilt in attempting to draw them out

of the hard soil and *débris* in which they were embedded. Altogether, with 10 or 12 men working all day, the total amount of earth actually excavated equalled that which one British navy could have torn up with a pickaxe in 10 minutes.

"In the case of the one or two mounds to which we confined our attention the mouth and roof appear to have collapsed owing to the destructive action of the trees and vegetation, rather than to faulty construction. White ants, too, have carried up so much earth when taking refuge upon them during wet weather, that it is in many cases impossible to determine whether the roof has given way. I strongly suspect that scientific investigation would find many of the kilns practically complete. In one instance a section of the roof was uncovered and visible, and I was struck with the fact that the kiln was evidently not a straight arch blocked by a perpendicular wall at each end, but was rather a perfect dome, on the beehive plan.

"We were puzzled for some time to conjecture the use and duty of the numerous 'pipes' which lay strewn around. The pipes are brown in colour, and glazed on the outside; one end widens out considerably. They are of all lengths and sizes. One



large specimen which I brought away with me measures 22 inches in length (end broken), $2\frac{1}{4}$ inches in diameter at the narrow end, and $4\frac{1}{2}$ at the base. A small one measures $3\frac{1}{4}$ inches in height, 1 inch at top, and $1\frac{3}{4}$ at base. After some little conjecture we discovered beyond doubt that these pipes were the stands upon which the raw bowls, &c., had been placed within the kilns. Fragments of the bases of bowls were picked up with a circular mark plainly visible where they had rested upon the stands; in some instances the top of the stand had broken off and remained adhering to the bottom of the specimen. The pipes had been built up exactly like a gun barrel, by a circular corkscrew manipulation of the clay—traces of the process are plainly manifest—and my friend and I came to the conclusion that some of these kilns must have been devoted to the burning of these 'stands' only.

"The fragments of pottery exhibited countless species of pattern, in 'ink,' fancy flower patterns, wheels, plain and fantastic grooves, and moulding in relief were equally plentiful. Of the battered specimens I procured, I endeavour here to give you an idea of the different shapes. None of these specimens are intact, all of them are damaged and chipped, some badly. Many of them are wasters. I have a specimen of four

bowls, like the one to the left in the photograph, which have collapsed and fused together.

"I have come to the conclusion that an absolutely perfect bowl, with moulding in relief, like that I gave to the British Museum, is not to be procured, or rather is not in existence. Whether I shall ever find myself in that district again I do not know, but if ever a chance presents itself of again visiting these wonderful kilns, I shall surely avail myself of it."

Georgia : Folklore.

Thomas.

Animal Folklore in Georgia. Collected by M. Sakkokia ; communicated by N. W. Thomas.

42

Among the answers I have received to my questions on Animal Superstitions the following are of some interest :—

1. If a cow or a bull bellows at someone, they say in Mingrelia that the person will soon die ; to prevent this they kill the animal ; the more economical spirits only pull out a tuft of hair and put it under their foot. This means, "May the animal be killed and his hide be used to make my boots ?"

2. After New Year's Day certain birds and young animals have the power to "conquer" human beings, if they are seen on an empty stomach. The way to prevent



FIG. 1.



FIG. 2.

this is to eat a little bread on getting up, and then, when you see a sucking pig, &c. for the first time, you say "I have conquered you." If you are conquered by a goat, your tongue will speak against your will the whole year ; a fowl will cause hunger and a feeling of discomfort ; a thrush, cold in the head ; a yellowhammer, grief ; and a sucking pig will cause you to be dirty.

3. On the first Saturday in Lent, called in Mingrelia "the Saturday of prayer for domestic animals," the peasants make cakes in the shape of cows, sheep, goats, &c., and put them in a deep wooden bowl. After the prayer the members of the household eat these cakes without using their hands. The basin is put on the ground and each person goes on all fours, imitating the animals in movements and cries. In Georgia the cakes are made at New Year.

4. In Mingrelia Turks are said to appear after death in the form of young dogs.

5. To protect the houses and gardens, skulls and stones with holes in them are put on poles (Fig. 1). For this purpose a cross of wood is also put up on July 20th and August 15th, when the witches hold their assemblies; a long pole is taken and split at the top; a cross piece is put in the split, and a crown of thorns hung on it (Fig. 2).

6. If a dog tries to jump over a paling between two houses, and sticks on the top with his body more on one side than the other, death will visit the house in the garden of which the greater portion of the dog is.

7. If the cuckoo is heard in the mountains on March 25th the mountains will yield a better harvest than the plains.

8. Catch a tree frog when you hear it for the first time in spring, and in doing so prevent it from uttering a sound; it should next be buried until only its bones remain, and then should be dug up and thrown into water; those that float should be charred; a little of the resulting powder thrown on the person or dress of the lady you love will prevent her from loving anyone more than yourself. The bones of the wagtail have the same magic power.

REVIEWS.

Religion.

Frazer.

The Golden Bough: A Study in Magic and Religion. By J. G. Frazer, D.C.L., L.L.D., Litt.D., Fellow of Trinity College, Cambridge. London, Macmillan, 1900. Second edition, revised and enlarged, 3 vols., 8vo, pp. xxviii, 467; x, 471; x, 490. Price 36s. net. 43

When the first edition of *The Golden Bough* was published in 1890, it was obvious that, whether the author's theory of the meaning of the succession to the Arician priesthood, which it was written to expound, were proven or not, an important contribution had been made to our knowledge of savage rite and savage myth. The criticisms bestowed on it were of the most various description; but, however they might differ, they were at one on this. Dr. Frazer attempted no immediate answer to objections. He wisely refrained from controversy. Taking note of the different points to which exception was taken, he bided his time until, with his unrivalled industry and the discoveries continually made, he should have an opportunity of restating his position and buttressing his arguments by further evidence. The time at length arrived; and he has now put forth a second edition double the length of the first, and strengthened on many points by illustrations often drawn from sources little known to English anthropologists.

What is the result? Hardly any part of the work has been left untouched. Paragraphs, pages, whole sections have been interpolated, and much has been rewritten. But while a great deal of valuable matter has thus been introduced, and clearer expression has been given to many of the author's ideas, the argument for the main theory has hardly been advanced at all. We seem to be no nearer the decisive solution of the riddle. And if Dr. Frazer's explanation holds the field, it is rather because no other explanation, intelligible on the known principles of savage belief and custom, has been offered, than because of its own cogency.

On many of the side issues, however, an advance has been made. Additional illustrations and fuller argument have thrown a brighter search-light upon many customs. Even where we cannot accept the author's conclusions, the additions to his collection of facts are helpful, and his arguments set the point under discussion in sharper relief. True, the very wealth of his anthropological learning impedes the hasty reader, who "cannot see the wood for the trees." But the book is not for the hasty reader. The author of set purpose has multiplied his evidences, and courted the discussion of side

issues. Recognizing the hypothetical nature of much that he has put forward, he expresses the hope that though his hypotheses be superseded, his "book may still have its utility and its interest as a repertory of facts." This hope at least will be realized. And Dr. Frazer is so candid and courteous in the presentation of his argument and the discussion of doubtful points, that perhaps I may be excused for taking advantage of the opportunity to mention one or two points on which I find myself unable to agree with him, and which consequently I must for the present consider as at least doubtful.

The first relates to the essential distinction between magic and religion, and the priority of the former in the order of evolution. Is there any evidence of this priority beyond the practices of the strange tribes of Central Australia? The "primitive" character of these tribes does not seem to me so fully established as Mr. Frazer thinks. Further information on their beliefs, the meaning of their rites, and the influences to which they have been subjected is highly desirable. In any case the foundation seems a small one on which to build so large an inference. Magic is not more widely prevalent in the world than the savage interpretation of external phenomena in the terms of human consciousness, and the doctrine of spirits. The practical application of the interpretation and the doctrine in question is what Dr. Frazer calls religion (i, 63), and I see no reason to suppose that it came into existence later than magic. I use the words magic and religion in Dr. Frazer's sense, as opposed to one another. It is convenient to do so, because, at least in their developed forms, there is an ideal distinction between them. But in fact, magic interpenetrates all religions, and the antagonism, frequently so pronounced, doubtless as the author sees, "made its appearance comparatively late in the history of religion." Moreover, this very antagonism is often rather the hostility of a State religion or a popular worship to an unpopular one, than the opposition of really irreconcilable principles. The author has given examples of the mixture of religion and magic in the cults of ancient India and Egypt, and even among the peasantry of Europe. But without trenching on ground it is desirable in these pages to avoid, I may point out to him that magic, as he defines it, is by no means to be confined to the peasant classes or to the non-official forms of Christianity, while the relations of the witches of Europe to the devil, as they appear in folk-tales and in the witch-trials, assuredly come within his definition of religion. The savage, it is admitted, knows no distinction between the natural and the supernatural. The beings whom he imagines, whether we call them gods or spirits, have powers over the forces of nature which only exceed his own, if they do exceed them, and do not differ in kind. While he invokes these beings for help, he also tries his own powers in the same breath. The finest gradations divide prayer from spell, the act of worship from the rite of imitative magic. "The functions of priest and sorcerer" are "not yet differentiated from each other," because magic and religion, growing from the same root, have not yet bifurcated.

Dr. Frazer has honoured me by devoting many pages of his third volume to the confutation of heresies of which I have been guilty. I am happy to confess that he has brought forward a mass of evidence as to cairns and the practice of adding to them, which will necessitate reconsideration of my theory on the subject. With regard to the practice of hammering a nail into the Cella Jovis, which I treated as analogous, I do not think he has been quite so successful. He has neglected the important point that the wall into which the nail was fastened was that of a sacred building. The knocking of nails into sacred buildings or trees, or into the statues of gods, cannot have been intended simply to transfer some evil to them. There is often no evil to be got rid of. There is none, for instance, in the marriage-rite at Montbéliard. The Lapalud near Angers, and the Stock im Eisen at Vienna are not sheathed with nails for any such purpose. The petitions implied by the pins in the statue of Saint Guirec, or the nails in a West African idol, have often nothing to do with the removal of any definite ill; still less are they intended to stick the ill into the object of worship. If I understand

Dr. Frazer correctly, he assents to the analogy of these practices with the Roman custom, though unable to accept my general explanation of them. But he himself offers no explanation which will cover them.

Again, we are at issue on the meaning of the "Sin-eater." Here the attack was mine, for I had ventured, somewhat rashly perhaps, to question his application of a similar rite reported by Dubois. In a note (iii, 18) he mentions the divergence of interpretation, and refers to certain customs as bearing out his view. But he does not discuss the Bavarian custom of making and eating *Leichen-nudeln*, in which the declared intention was the exact opposite of sin-eating, and other customs to which I had ventured to call attention.

In these cases it may be that neither of us took into account the possibility that more than one train of savage reasoning has converged on the same or the like ceremony. I think Dr. Frazer has forgotten this possibility again in his explanation of the practice of passing a child through a split ash-tree. It is idle to deny (and I have not denied) that many medical prescriptions in favour among the peasantry of Europe contemplate the transfer of the disease to a tree, or to some other human being, or one of the lower animals—in fact, to any convenient object. But it seems impossible to account in the same way for all the prescriptions which at first view seem alike. And I endeavoured to explain the practice in question as a mode of uniting the sick child for his or her benefit with the healthy young tree. Dr. Frazer contends it is a case of transfer of disease, and adduces in illustration a number of cases from savage life of passing through cleft trees and other symbolical apertures for the purpose of getting rid of dangerous spirits or of disease. We may admit the meaning of all of these examples to be what is here attributed to them, and yet we shall be none the nearer the explanation of passing the ruptured child through the tree. For all the examples omit the essential condition of the success of the rite, namely, that the tree shall reunite and flourish, because the child's life is henceforth bound up with it. The suggestion (iii, 397) "that with the disease the sufferer is supposed to transfer a certain vital part of himself to the tree, so that it is impossible to injure the tree without at the same time injuring the man," does not meet the difficulty, since in undoubted cases of transfer of disease or riddance of spirits we do not find this essential condition. We cannot, therefore, refer the rite at the split ash to the same origin as the latter. Different trains of thought have produced similar rites.

It may be true that none of the side issues to which I have referred are essential to Dr. Frazer's main argument. Yet they seem to me to exhibit a weakness which runs through much of the work. It is forgotten that we cannot assume that the same motives have in all circumstances led to actions which bear an outward likeness to each other, or that one action or rite may be due to the concurrence of more than one line of reasoning. The section on Lityerses contains an example of a mistake of the same kind, namely, the confusion of two distinct and disparate, though similar rites. After comparing, I think rightly, the story of Lityerses with certain European harvest-customs wherein the pretence is made of putting a man to death, and after showing that in the modern customs the victim is treated as an embodiment of the corn-spirit, he goes on to say (ii, 237):—"it is desirable to shew that in rude society human beings have been commonly killed as an agricultural ceremony to promote the fertility of the fields." But of all the cases he cites, with one doubtful exception, the Mexican is the only harvest custom. It may be conceded that in all the others the promotion of the fertility of the fields is beyond question the object. It does not follow that that is the object of the European harvest customs, or that it was the object of the hypothetical Phrygian custom which is handed down to us in the story of Lityerses. Rather we may presume it was thought that the harvest was not properly reaped unless the spirit of the corn was secured and slain with it. The slaughter of the spirit of the corn in its full strength

may have been a necessary preliminary to its rising again in undiminished vigour the following year. All that Dr. Frazer says about the parallelism of Lityerses and Attis (ii, 250) may be perfectly accurate. His interpretation of both may be accurate too. But it does not seem to be assisted by the examples he has given of savage rites practised at or near seed-time. Lityerses was, not a Meriah.

Few anthropologists, I imagine, are in the habit of reading the *Analecta Bollandiana*. It is therefore to be regretted that Dr. Frazer has omitted to give us the date and other particulars of the manuscript of the *Acts of Saint Dasius*. If this account of the martyrdom of a Roman soldier be in the main authentic, it throws an unexpected light on the Saturnalia. But the evidence for the authenticity is not before us. *A priori* the story does not seem very probable; while on the other hand the untrustworthy character of many of the "Acts" of early Christian martyrs is well known. I regret the omission all the more because the section on the Saturnalia, which is entirely new, contains some of the most suggestive speculations of recent years, and the story of Saint Dasius is not the least important link in the chain of evidence in support of them.

I trust I have not successfully concealed in these brief and discursive remarks my great admiration for *The Golden Bough*. If I cannot accept all the author's conclusions, if I hesitate to admit that his main theory is proven, I am none the less ready to acknowledge his mastery of anthropological problems, his skill in their discussion, his fertility in suggestion, and his almost boundless industry and learning; I am none the less ready to acclaim the value of the contribution which these have enabled him to make here, as elsewhere, to anthropological studies. The new edition has greatly enhanced the debt which all students owe to him. And insensible must be the ear in which the music of many an eloquent page does not ring and ring again long after the book has been closed, and doubts as to this point or the other have been busy in the mind.

E. SIDNEY HARTLAND.

Folklore.

Rhÿs.

Celtic Folklore: Welsh and Manx. By John Rhÿs, D.Litt., Professor of Celtic, Oxford. Two vols., 8vo. Oxford, Clarendon Press. 1901. Pp. xlviii, 718. Price

44

A suggestive book, containing not only a quantity of new and old material carefully recorded and commented on, but also a deal of new thought on matters anthropological and even historical connected with the traditions referred to. The pleasant and unaffected style make its perusal agreeable, and the learning and ingenuity of the writer are as evident as ever.

The topics treated are Welsh "Undine" stories; Welsh ideas respecting the *Tylwyth Teg* or Fair Family, and their descendants, fairy wives and cattle, changelings, dances, mermaids, *afancs*, or lake Kelpies, a set of Rip-Van-Winkle tales, the Wild Hunt, familiar spirits, auguries, All-hallows' customs, Tom-Tim-Tot stories, the March-*Minōs* legend, phantom funerals, and other death portents. Chapters IV., V., are concerned with Manx folklore—fenodyree [brownies], sleih beggey [little folk or fairies], witches, sacred days, healing wells, qualtagh [first foot], &c. Chapters VI., VII., deal with the sacred springs, the drowned lands of Wales, water horses and water gods, the Welsh *cyhiraeth* and mourning spirit [ban-shee], and the identification of Seithennin, son of Seithyn Saidi, with the name of the *Σενταντιων* people of Ptolemy [*Septantia* they would be in Latin], Goidels driven west, of whom the greatest hero was *Setanta beg* [the little Setantian], Cuchulind himself; the parallelism of *Donwy* with *Danubios* [Danube], of Brun de Morois with the King Gwyn ap Nudd and of his steed *Du y Moroed* with Percival's demon charger.

Chapter VIII. discusses the Welsh Cave legends, and unfolds a curious history, in which we find Owen Redhand, Froissart's Yvain de Gales, becoming a Welsh Sebastian or Barbarossa or Holger danske, and actually ousting Arthur himself, who had replaced the Kronos sleeping, as Demetrius told the Emperor, with his mighty vassals round him in the keeping of Briareus. Chapter IX. treats of the great legendary Hunting of the Magic Boar, a story which belongs, as Dr. Rhys proves, to the Goidels originally, and helps with much other evidence to show that the Goidelic tribes, of what is now Wales, were gradually absorbed by the adoption of the Brythonic speech among the surrounding Britons. Anglesey, Snowdon, Bedgelert, are Goidelic districts, and the Goidels seem to have kept their speech and nationality down to the 7th century in spite of their defeats. The early British ideas of a soul and its persistence through transformation and transmigrations are treated in Chapters X. and XI., as well as the remains of Non-Aryan beliefs connected with "Druidism," the *Shamanism* that prevailed in Hibernia, where it still persists in a slightly altered form, and in the far west of Britain.

The evidence in favour of pre-Celtic races, one of dwarf kind, another with Berber affinities, is marshalled as far as it can be drawn from the folklore of the country, e.g., the Coritani-Coraniaid are dwarf magician people to the bigger people about them, as the Eskimo are to the red man. As soon as accurate measurements have determined the chief typical strains surviving among us to-day, the evidence of linguistic and folklore as to the strong non-Aryan elements in the population of these islands, will, we can hardly doubt, be abundantly confirmed. But, of course, we are too poor a nation to utilize our abundant opportunities, to pursue Galton's experiments, or make anthropometric investigations on a scale beyond private means.

The excellent bibliography and list of Welsh folklore books arranged by counties, the full index, and careful references, greatly enhance the value of these well printed and handsome volumes.

F. Y. P.

Morocco : Language.

Stumme.

Handbuch des Schilhschen von Tazerwalt : Grammatik, Lesestücke, Gespräche, Glossar. Von Dr. Hans Stumme, Privat-docenten an der Universität, Leipzig. 45
Leipzig, Hinrichs, 1899. 8vo, pp. vi, 249. 12.80 marks.

Dr. Stumme is well known to students of the dialects and folk-literature of North-West Africa, and has laid them now under still further obligations by this learned, scholarly, and compendious treatise on one of the most interesting of African languages.

Three branches of the Libyan group of speech are commonly spoken within the political boundaries of Morocco ; and are named respectively after the Riffs of the coast-land, the Berbers (in the narrower sense) of the interior, and the Shluhs of the south. These branches differ from each other about as widely as do the Romance languages of Southern Europe ; and, like these, each includes a number of local dialects which are often so strongly marked that the speakers are barely intelligible to one another.

In the case of the Shluhs, needless confusion has been introduced, in addition, by the fact that their name was originally merely a word of contempt (*šilh*) applied by the Arab invaders to any Libyan or Berber marauders who harried their settlements ; and has only gradually become restricted to certain tribes who have resisted Semitic influences most obstinately, and clung longest to their ancestral speech. Even so, many of the so-called "Shluhs" of Tripoli, and even of Southern Tunis, are unintelligible, both to one another, and to the Shluhs of Morocco ; with whom they seem to have little more in common than the Kabyles of Northern Algeria have with the Riffs of the Moroccan coast.

The subject of the handbook under review is the special dialect of the district of Tazerwalt in Southern Morocco, which has attained a wide distribution outside its own

country, partly because Tazerwalt is the headquarters of the troupes of travelling acrobats, who wander all over the East, and have been known to perform in Europe, and even in America ; partly because the Tazerwalt Shluhs have accumulated a very considerable literature of ballads and other poems, and of the proverbial sayings of the acrobats' patron-saint, Sidi-Hamd-u-Musa, whose tomb is shown and venerated at Ilêg in the Tazerwalt country. These numerous compositions have attained a wide celebrity among Libyan-speaking peoples, and have provided the materials for a sort of *koiné dialektos* between tribe and tribe, so that a knowledge of the Tazerwalt-Shluh dialect is of great importance to anyone who travels or trades among the peoples of Southern Morocco, and of the *hinterland* of French Africa and Tripoli.

Many of the poems and folk-tales of the Tazerwalt-Shluhs have been published already, for the most part by Dr. Stumme himself ; and it is greatly to be hoped that he may be able before long to add yet another instalment from the great store of material which he has collected.

His present work is an important contribution to the study of the language itself, and consists of : (1) an elaborate grammar (pp. 1-128) with a series of short exercises in Tazerwalt-Shluh appended ; (2) a very practical phrase-book for the use of travellers, traders, and medical men (pp. 131-154) ; and (3) a full glossary with etymological notes (pp. 155-246), which includes a complete vocabulary to the author's previous publications already mentioned, and omits only such groups of words—plant names, insect names, and the like—which only a specialist requires, and which a specialist will inevitably discover at first hand for himself. The Shluhs themselves use the Arabic character—the Tuareg script apparently not going so far north-west ; but this mode of transcription not being sufficiently accurate for phonetic study, as the sample printed in section 21 will show very clearly, Dr. Stumme has wisely printed in Roman character throughout. Even so, diacritical marks, not a few, were perhaps inevitable ; and perhaps even more might have been done to facilitate, for a beginner, the pronunciation of words like *adağdâhtntfkt* (p. 9), or *ğlb3âdan* (p. 147).

We may, perhaps, be permitted to regret that Dr. Stumme has not seen his way to include in his *Handbook* more frequent comparisons of the Tazerwalt-Shluh with other branches of the Libyan-Berber group ; which would have made his work of importance to a larger circle of readers. But perhaps we may regard the extreme care which he has taken to confine himself to the special dialect under consideration, as a hint that the comparative study of it is only deferred for awhile.

In conclusion, may we congratulate Dr. Stumme on the statement, made in the preface, that he has lectured for two terms on Berber languages to an eager audience in the University of Leipzig. Truly the Germans know that business is business ; and that if you are going to study or trade abroad, it is as well to make yourself understood to the people of the place. There is plenty of room for all, however, among the Tazerwalt-Shluhs, and we heartily recommend Dr. Stumme's *Handbook* to the "Commercial" if not to the "Philological" Faculty of any British University.

J. L. M.

Language : Assam.

Hamilton.

An Outline Grammar of the Dafla Language as spoken by the Tribes immediately South of the Apa Tanung Country. By R. C. Hamilton, Indian Civil Service : Shillong, Assam Secretariate Press, 1900. 8vo. 127 pages, price 1 rupee.

We have here an excellent grammar of a language closely allied to the Miri and Cachari. The author has added an interesting collection of phrases and short stories, with a complete vocabulary.

W. CROOKE.

Melanesia: Ethnography.

Foy.

Tanz-objekte vom Bismarck-Archipel, Nissau, und Buka. By W. Foy. Pp. viii, 40. Seventeen plates, and two blocks in the text. Forming Vol. 13 of Publikationen aus den K. Ethnographischen Museum zu Dresden. Price £3 15s.

47

Ethnologists owe a deep debt of gratitude to Dr. Meyer and the Dresden Museum for this sumptuous series. It makes accessible to the world by means of photographs the most interesting and important objects in the Museum, and elucidates them by a descriptive text which is concise and yet sufficient. In the volume before us this is preceded by a general introduction, in which the author rejects as premature all attempts at interpretation which are not founded on an exact knowledge of the individual tribes. The mere occurrence of similar motives in ornament is in itself no more a proof of intercommunication between the parts of the world where they are found than is the occurrence of similar customs; the connection can only be established by exact studies dealing with larger areas than any man can cover single-handed. Conclusions based on facts gathered in one field are too often recklessly applied to explain similar elements in other fields, which, when they are more closely examined, are shown to belong to quite a different circle of ideas. Thus, the assimilation of the Duk-duk costume to certain African costumes is readily proved to be fallacious by the undeniable fact that the Duk-duk costume is intended to represent a gigantic cassowary. It may be true that the African mask-costume has developed from the "Hüttenmaske"; but to derive Oceanic mask-costumes from the same source is a mere speculation, which, so far from being based on facts, runs counter to much that we know. Our material is everywhere so incomplete, that a single new discovery may overthrow the most carefully built-up fabric.

Most ethnological museums contain examples of the very remarkable and elaborate masks and dance ornaments that come from Northern Neu-Mecklenburg (New Ireland), and it is very convenient to have a number of these extremely varied objects carefully described. In connection with these objects the author has given a valuable essay on the fish-motive, which is so constantly present. They are illustrated on Plate xiii. There is another study on the variations and the development of the depending birds which are represented under and over the mouths of many of the figures and masks from North Neu-Mecklenburg and elsewhere. Plate xiv. illustrates this thesis.

The body of the book is taken up by descriptions of masks and other objects used in dances in North Melanesia, and its value is enhanced by discussions on the ethnographical relations prevailing in the islands, by invaluable bibliographies, to which an appendix will be found in *Globus*, 1901, p. 97, and by the reproduction and description of similar objects from other groups for purposes of comparison. Those who know the publications of the Dresden Museum, most of which are, in whole or in part, from the pen of Dr. Meyer, will be fully prepared to believe that it is worthy of its predecessors.

A. C. HADDON.

Folklore: England.

Gomme.

Old English Singing Games. Collected by A. B. Gomme, illustrated by Edith Harwood. London, Allen, 1900. Crown oblong, pp. 55. Price, 5s.

48

Mrs. Gomme has in this book presented the public with a children's book of games and tunes which may be read by older people too. In England the development of children's games is not officially promoted as it is in Germany, and it is a matter for regret that an occupation which educates as well as amuses should not receive more attention in England. This book will give those people some material to work on, who would be glad to do something in this direction. The little people for whom it is intended will only regret that it is not longer.

N. W. T.

India.**Waddell.**

Among the Himalayas. By Major A. L. Waddell, LL.D., F.L.S., &c.
 London, Constable (Philadelphia, Lippencott). 1900 (2nd edition). 8vo, pp. xvi, 452. Maps and many photographic illustrations. Price 6s.

49

Major Waddell's book gives an interesting account of that part of the great Himalayan system which is included within the little State of Sikkim. If he has struck out no very new or original line of his own, he has at least illustrated a subject well which must ever possess a strong fascination for the mountain-climbing Englishman.

The geographical position of Sikkim on our Indian frontier, which invests it with the command of the most direct approaches to Lhasa, renders it important both politically and strategically, and Major Waddell appears to have made a fairly exhaustive enquiry into the general physiography of the State with a view to future possibilities in the matter of a great high road northwards. His first excursion was from Darjiling by the Tibetan trade route to Gantok, and thence to the quaint native capital of Sikkim (the residence of the King), Tumlong. This took place about ten years ago. Meanwhile this route has developed rapidly, and it will not be long before a cart road connects Silligori (the terminus of the Northern Bengal Railway) with Gantok, if indeed it has not already done so. The existence of such a road would naturally discount any other proposed line of trade route outside Sikkim territory. From Tumlong he passed by the Lachun valley to the glacial regions of the Donkia pass, and then returned southwards over the line taken by our troops under General Graham when they turned the Tibetans out of Sikkim into Chumbi in 1887.

It is, however, amongst the glaciers and snows of the north west, lying in the cold shadow of Kanchenjunga and its kindred peaks, that the attraction of Major Waddell's story chiefly lies. Kanchenjunga is barely 1,000 feet lower than Everest (29,000 feet), and its dominant position facing the forest-clad slopes of Darjiling invests it with peculiar grandeur. Everest lies on the borderland between Nipal and Tibet in a position so remote as to be practically inaccessible to European exploration, and it is only doubtfully visible from the neighbourhood of Darjiling. Major Waddell enters into the question of Everest's claim to be considered the highest peak in the Himalaya, and his conclusions appear to be those of Indian surveyors, *i.e.*, that the claim is justified by the great mass of existing evidence.

The book is well illustrated. Major Waddell is something of a geologist and botanist as well as an artistic observer; nor has he altogether neglected the claims of anthropology. There are some capital photographs illustrative of the distinctions in dress and feature between the Lepchas, Nipalese, and Tibetans whom he encountered, and the result is a useful contribution to our general knowledge of the physical characteristics of these people.

T. H. H.**Language: General.****Sweet.**

The History of Language. By Henry Sweet, M.A. London, 1900. (The Temple Primers: J. M. Dent & Co.)

50

This little book forms an extremely useful introduction to the principles of Comparative Philology. The earlier chapters deal with the definition, scope, methods and development of language generally. In those following, the author gives a brief sketch of the structure of the Aryan or Indo-Germanic Family of Languages and a discussion of its affinities to other Families, especially the Altaic and Sumerian. The concluding chapters refer to the Individuality of Language and the connection between Language and Nationality. Considering the condensation required to bring such a wide range of subjects within the limits of a small primer the author has succeeded in making his statements very clear and in adequately illustrating them.

S. H. RAY.

ORIGINAL ARTICLES.

New Hebrides.

With Plate E.

Balfour.

Memorial Heads in the Pitt-Rivers Museum. By Henry Balfour, M.A.

51

A considerable number of the heads detached from the grotesque effigies set up in *memoriam* of departed relatives by natives of the island of Malekula, New Hebrides, have reached the various European museums, and of these many have been figured and described. It might appear unnecessary to figure one of these in this journal, were it not for the fact of its presenting a feature which I have not hitherto noticed in other examples. As usual this particular example (Plate E, Figs. 1 and 2) consists of a human skull exhibiting well-marked artificial deformation, the facial portion overlaid with a composition chiefly of vegetable matter in such a manner as to reproduce the human features, colour being applied in a *bizarre* fashion as though the face were painted for a dance ceremony. Although it would probably be difficult to find two of these heads which resembled each other at all closely, still the features are as a rule treated in a rude, grotesque, and conventional manner, but little suggestive of any attempt at portraiture. Instances, however, occur in which it seems likely that there has been a deliberate attempt to reproduce, as far as native skill would allow, the characteristic features of the deceased. The present specimen is a good instance in point. Allowing for the difficulties necessarily encountered by the native artist in the reproduction of the human face in plastic materials, one may well admit a considerable success in this example, the realism of which is far more apparent in the specimen itself than in the photographic reproduction. If one may still be inclined to doubt that there is exhibited an attempt at portraiture, one interesting feature may surely dispel the scepticism. The person represented evidently suffered from the form of malformation known as *hare-lip*, and this has been most faithfully represented in a very realistic manner in the facial reproduction which embellishes the skull of the deceased. This certainly seems to point to an attempt to make the face of the effigy recall the peculiar features of the deceased to whom the figure was erected. Hitherto, I have not come across any similar instance of the representation of a malformation in these Malekulan heads, but others may exist, and a comparative study of the available heads would undoubtedly prove of interest. This specimen, as well as the two about to be described, was collected by Mr. Norman Hardy, and is one of some nine or ten of these Malekulan heads in the Pitt-Rivers Museum at Oxford.

The two heads represented in Figs. 3-6 belong to a class which is less often to be seen in museums. They are, in fact, distinctly rare. Like the Malekulan heads they are memorial effigies, and the skull of the deceased person so honoured forms the basis upon which the features are built up in a hard black composition. These heads from Rubiana, Solomon Islands, are more elaborately finished than those from the New Hebrides, considerable pains being taken in inlaying them with small shaped pieces of pearl shell. The eyes are of white shell with black centres, and the hair is represented by a kind of wig of vegetable fibre. That shown in Figs. 3 and 4 exhibits a somewhat grotesque treatment of the features, in which may be seen a style of representation of the human form which characterises the little grotesque heads which are attached to the prows of canoes, commonly referred to as "canoe-prow gods," in which a stereotyped traditional style is manifest, affecting much of the art of the northern islands of the Solomon group. The other head (Figs. 5 and 6) exhibits a far less conventional treatment, the features being realistically represented with considerable skill, suggesting that in this example there has been an attempt at making a portrait study of the deceased. The whole work has been effected with more care and skill, and it appears to be the work of an artist of far greater capability than is the case in the other head. I am unaware how many of these memorial heads from Rubiana are preserved in museums,

but I believe that they are few, and it is to be hoped that they may all be figured together for purposes of comparison. *Portraiture* in savage art is a subject well worthy of comparative treatment, and this class of objects would form most useful and instructive material.

HENRY BALFOUR.

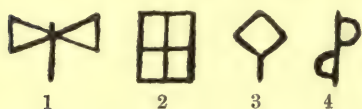
Ægean Script.

Herzog.

On the Survival of Pre-Hellenic Signs in the Island of Kos. By Dr. Rudolf Herzog, Docent in the University of Tübingen.

52

In searching the island of Kos for inscriptions in the summer of 1900, I had the opportunity of making a careful study of the Turkish castle in the town of Kos (*Stankö*). This castle was built by the Knights of St. John, and its walls are constructed for the most part of ancient stones. The occurrence of other blocks of the same kind scattered about the circuit of the town makes it practically certain that they are derived from the town and harbour wall, which according to Diodorus, XV., 76, were built in 366 B.C. to protect the newly-founded capital. The blocks in question bear large, boldly-cut mason's marks or quarry marks, which represent for the most part



single letters, or ligatures, of the Ionic alphabet, of the forms which suit the date of the wall. Some of the signs, however, cannot be explained from this alphabet; the most important, which are represented by many examples, are represented in the figure, and may very well have maintained themselves as fossil survivals from the Pre-Hellenic, i.e. (in Kos), the Karian period of the island. The first sign may be explained with certainty as the Karian "double-axe" ($\lambda\alpha\beta\rho\iota\varsigma$), and occurs also in the Pre-Hellenic script of Crete (Evans, *Journal of Hellenic Studies*, XIV., p. 349 (22), XVII., p. 386 (19)). The second sign also is found in Crete (i.e., XIV., p. 349 (9), XVII., p. 386 (16)). The second, third, and fourth signs might in themselves be brought into connection with Hellenic alphabetic signs.

I prefer not to attempt to interpret the signs, or to make any further inferences from their discovery; but perhaps the record of it will be a distinct contribution to the burning question of the Pre-Hellenic script in the southern islands of the Ægean.

R. HERZOG.

Religion.

Cumont.

Note on the Acts of St. Dasius. By Franz Cumont. Communicated by J. G. Frazer.

53

The following note on the authenticity of the *Acts of St. Dasius* has been written by Prof. Franz Cumont, who edited them, in reply to the suggestion made by Mr. Hartland in the review of the *Golden Bough* (*Man*, 1901, 43).

Je comprends d'autant mieux les doutes exprimés par M. Hartland dans le *Man* que je les ai d'abord partagés moi-même. C'est une série d'observations d'un de mes amis qui m'a converti et m'a fait attribuer aux Actes de St. Dasius une autorité que je leur refusais d'abord (cf. Léon Parmentier, *Revue de Philologie*, t. XXI, p. 143, ss.). Les manuscrits qui nous racontent le martyre du saint ne sont, à la vérité, pas antérieurs au XI^e siècle, mais il existait déjà à cette époque plusieurs récits différents et leur source commune doit être beaucoup plus ancienne. Des indices sérieux tendent à prouver que la rédaction grecque de ces actes remonte au V^e ou VI^e siècle, et l'original latin, dont cette traduction dérive, est certainement encore sensiblement antérieur. St. Dasius est nommé dans le martyrologe hiéronymien et il est démontré que les données de ce document hagiographique qui sont relatives à l'Empire d'Orient, dérivent d'un martyrologe grec rédigé à Nicomédie entre 362 et 411. La mort du martyr qui

eut lieu "le 20 novembre 303 ap. J. C. un samedi, à la quatrième heure, le vingt- " quatrième jour de la lune " n'est donc pas bien éloignée du plus ancien texte historique qui en fasse mention.

J'ai longtemps hésité à admettre qu'au IV^e siècle de notre ère une victime humaine, fut-elle volontaire, ait pu être immolée aux dieux. Mais la persistance de pratiques aussi cruelles est attestée jusqu'à la fin du paganisme par de nombreux témoignages. La collection de textes la plus complète a été réunie par Chwolsohn dans son livre sur les Sabiens (*Die Ssabier*, t. II, p. 142 ss. *Über Menschenopfer in der späteren Zeit des Heidentums*). Elle pourrait encore être enrichie de nouveaux exemples. En ce qui concerne spécialement Saturne, Sextus Empiricus au II^e siècle de notre ère (*Hypot.* III, 208 et 221) nous dit positivement qu'on "immolait un homme à Kronos," et St. Cyrille (*Adv. Julian*, p. 128 D) nous raconte qu'à Rome même, le jour des Saturnales, on livrait au Forum un combat de gladiateurs et que le sang du champion vaincu coulait à travers des dalles percées de trous sur un personnage placé au-dessous dans une fosse et censé représenter Saturne. C'était évidemment une sorte de sacrifice analogue au taurobole, et si une pareille immolation a pu avoir lieu au cœur de Rome, je ne vois aucun motif pour refuser de croire que la soldatesque des garnisons du Danube ait pu mettre à mort "le roi des Saturnales." Remarquons-le, ce roi se dévouait lui même, et la *devotio* a toujours été considérée dans l'antiquité comme un acte louable, en particulier dans l'armée.

FRANZ CUMONT.

China.

Bushell.

Relics from Chinese Tombs. (See MAN, 1901, 15.) By Dr. S. W. Bushell, C.M.G.

54

Mr. C. H. Read has described, in a most interesting article published in the February number of *Man*, the contents of an early Chinese tomb sent to him by an English Jesuit missionary from the province of Shensi, which he has since presented to the British Museum. One of the bowls and a vase of glazed pottery are well figured in *Man*, 1901, Plate B, together with a bronze mirror dug up with the earthenware, which is of special importance as an aid to fix the date of the interment. Mr. Read's missionary correspondent states that it bears on it the name of an army leader of the Fu-Tang dynasty, who would have lived towards the close of the period A.D. 618-934.

I have been permitted to examine the mirror, which is unfortunately so much worn that the inscription running round the field on the back, outside the raised animal forms, is almost entirely defaced. The animal forms are of astrological character, representing, probably, the four quadrants (*Cf.* Mayer's *Chinese Reader's Manual*, p. 307), or divisions of the twenty-eight constellations of the lunar zodiac; the serpent coiled round the tortoise and the dragon being comparatively distinct, while the phoenix and the tiger are obliterated. The only two characters of the almost illegible inscription which I am able to decipher are *ssü p'ang* (四旁), the "four quarters" of the world ruled by the above zodiacal signs. The inscription would appear to be astrological rather than personal. The style of the writing seems to be that of the Han dynasty (B.C. 206—A.D. 220) with its curved outlines, the strokes being more angular during the T'ang dynasty and more like those of the modern characters. The archaic ornamental scrolls of the borders round the rim of the mirror point also to the Han dynasty, as may be seen by a glance at the figures of similar mirrors of the period included in the *Po Ku T'ou* and other illustrated Chinese books on bronze antiquities.

With regard to the pottery, there is no reason, as far as I know, why it should not be attributed to the same early period. The vase, with its stippled brownish-black glaze shot with invisible green, stopping short in an irregularly curved line before it quite reaches the foot, would certainly be referred by a Chinese collector to the Han dynasty. The material generally used in the production of the colour being an impure

native cobaltiferous ore of manganese containing iron, the iron gives a brownish tinge to the black body and changes the cobalt to green.

The small red glazed bowls are of a much rarer type, and I have never seen their like in any Chinese collection. Of finished technique, they exhibit a smooth glaze of remarkably uniform colour, due, doubtless, to iron peroxide, one of the earliest pigments used in Chinese ceramics. Are they not, by the way, wine cups, buried with the owner's wine vessel? The wine cup of the Han dynasty was usually fashioned of glazed earthenware, replacing the bronze, jade, and horn cups of earlier times; under the T'ang, wine cups were made of gold, chiselled silver, carved rock-crystal and other hard stones, glass and porcelain, and under the Sung (A.D. 960-1279) self-coloured porcelain came into general vogue, such colour being selected as would enhance the natural tints of the wine or tea for which they were intended to be used.

The prevailing colour of the pottery of the Han dynasty was a bright green monochrome tint, produced by the addition of copper oxide to a siliceous flux. A dull black comes next, being that of the lac-black circular dish described in the *T'ao Shuo*, the well-known Chinese book on pottery, as having been discovered in the tomb of the Empress Tao Hou, a consort of the celebrated Wu Ti (B.C. 140-87) of the former Han dynasty. From the evidence of this recent find it seems that we may venture to add a pale vermilion to the brief list of self-coloured glazes of this early period.

S. W. BUSHELL.

New Zealand: Maori Art.

Haddon.

On the Origin of the Maori Scroll Design. By A. C. Haddon, Sc.D., F.R.S.

55

It looks as if Mr. Edge-Partington's efforts to get at the origin of the Maori scroll design are likely to be crowned with success. In the last number of the *Journal of the Anthropological Institute* (Vol. XXX, Plate E), he figures two old Maori carvings with the *manaia* design. In the accompanying text (*J. A. I.*, XXX, *Miscellanea*, No. 40) he speaks of this as a "mythical monster"; but the *manaia*s which he figures appear to me as if they might very well be degraded and conventionalised representations of birds. If this should prove to be the case, we have not far to seek for the origin of the bird, for the sacred bird of the West Pacific, that which possesses *mana* (spiritual or magical power) in an eminent degree, is the frigate bird (*Fregetta aquila*). Assuming this identification to be correct we have a further argument in favour of a Melanesian element in the population of New Zealand.

A. C. HADDON.

Pacific: Forgeries.

Edge-Partington.

Note on Forged Ethnographical Specimens from the Pacific Islands.

Communicated by J. Edge-Partington.

56

As the number of collectors of ethnographical specimens from the Pacific Islands increases (as it is evident that it does, to anyone who attends the sale-rooms) so also does the supply of objects. It is evident, therefore, that a large proportion of this supply must consist of forgeries. Mr. Basil Thomson in his handbook to Fiji, published by the Canadian-Australian R.M.Steamship Line, draws attention to this in the following words:—

"Fijian weapons are, moreover, nowadays generally forgeries. A year or two ago a Government official, passing through a remote and primitive village at high noon, when all the inhabitants were away in their plantations, peeped into a house, and saw rows upon rows of clubs and spears suspended from the roof. For the moment he thought he had discovered a secret plot against the Government, but an aged crone who sat blinking in a doorway enlightened him. They had been made the week before, and had just been dug up from the black mud of the marsh, where they were dyeing for the white tourists in Suva. The commonest forgery is the cannibal fork."

At a recent sale the most obvious forgeries from New Guinea were offered and eagerly bought. I had occasion a short time ago to write to Mr. Hedley, of the Australian Museum, Sydney, for information as to feathered arrows from the New Hebrides. In his reply, Mr. Hedley says:—"We found out the locality for those "feathered arrows. I am told that you collectors have created such a demand that "they are being made for trade already." I hope this may be a note of warning to many collectors.

J. EDGE-PARTINGTON.

W. Africa.

Dalton.

On Carved Doorposts from the West Coast of Africa. By O. M. Dalton, M.A., F.S.A.

57



The appended photograph represents two modern doorposts obtained by Mr. F. Rohrweger, C.M.G., in the interior to the north of Lagos, the precise locality not having been ascertained up to the time of writing. The carving is in the style characteristic of this part of Africa, and offers several points of ethnographical interest. The design consists in each case of three tiers of human figures separated from each other by discs, the whole being cut from the solid block. In Fig. A all the figures but one have the same tribal cicatrices upon their faces, three vertical marks on the forehead, and three horizontal on the cheeks. The one exception is the prisoner in the middle tier, who has no marks on the forehead, while those on his cheeks are vertical instead of horizontal. This difference of marking suggests that the prisoner is of a different tribe to his captor, and recalls similar differences in such of the Benin bronzes as represent incidents of capture. In Fig. B (though the photograph unfortunately does not show it), the marks on the cheeks are both horizontal and vertical, with the exception of those of the lowest figure, which resemble those of Fig. A. The object carried by this figure, as also by the man in the bottom tier of Fig. A, is a drum suspended from the shoulder; in the middle and upper tiers of Fig. A, two of the men carry guns. These doorposts are now in the British Museum.

O. M. DALTON.

South Africa: Bushman.

Beddoe.

Description of a Bushman Skull. By John Beddoe, M.D., F.R.S.

The skull which is the subject of this note was presented to Dr. Beddoe by **58** Major Ryder, who obtained it in the neighbourhood of Kenhardt, where the "wild" Bushmen have been extinct many years, though some of those surviving in a "tame" condition may be pure-blooded. There are many Bushman drawings, or rather sculptures, on the rocks about Pietrooisberg, near Kenhardt; in these the animals are represented, Major Ryder says, with wonderful accuracy and spirit, but the human figures are apparently conventional, mere things of dots and lines. The Bushman graves are regarded with superstitious dread by the Bastards and other natives.



The skull is perfect, only wanting the mandible. In the vertical aspect it is phænozygous and sphenoid, with smoothly rounded prominence of the occiput; in the occipital broad and flat; in the lateral low, flattened, with rather low but vertical forehead, and prominent occiput with lambdoid flattening. The orbits are low, squarish; the nasal notch almost absent, the nasal opening short and broad; there is considerable alveolar prognathism. The palate is elliptic; the teeth are much ground down, but without decay. Frontal and coronal sutures obliterated; sutures generally simple and uncomplicated. Bones posteriorly rather thin and light: weight 18 ounces. I am not sure about the sex.

MEASUREMENTS.

<i>Lengths</i> - Glabello-max. - 175	Fronto-inial - 170
Glabello-inial - 166	Ophryo-max. - 175
Nasio-alveolar - 52	Basio-nasal - 95
Basio-alveolar - 95	
<i>Breadths</i> - Fronto-minimum 95	Stephanic - 105
Bijugal - 104	Auricular (meatus) 86
Bizygomatic - 118	„ (fossa) 104
Maximum - 131 (p)	Asterial - 102
Mastoid - 111	Interior orbital - 98
Exterior orbital 111	

Arcs - Circumference - 496

Sagittal arc, 132 f + 111 p + 75 + 40 + 34 f + 95 = total 487.

Transverse arc, 288 + 109 = 397.

Inferior frontal arc, 264. Occipital arc, 258 ?.

Superior „ „ 277. O. Thomas's arc, 107 to 100.

Orbit, 38-30. Nasal, 34-29. Foramen, 32-28.

Indices - Latitudinal, 74·85. Altitudinal, 66·28. Orbital, 79. Nasal, 85.

Capacity - Estimated (Topinard) 1176.

J. BEDDOE,

REVIEWS.

Sweden: Physical Anthropology.

Retzius.

Crania Suecica Antiqua, eine Darstellung der Schwedischen Menschen-schädel, aus dem Stein-zeitalter, dem Bronze-zeitalter, und dem Eisen-zeitalter, &c. By Gustaf Retzius. With 100 pages of photogravures, and other illustrations. Stockholm, 1900. 59

"Exegit monumentum ære perennius," may be said of Gustaf Retzius; but he has erected the monument at least as much to the memory of his illustrious father, Anders Retzius, as to the credit of his own labour and accuracy and scientific accomplishment.

This is a sumptuous work, fit to be compared to the finest pieces of anthropological literature that our own country has produced, the *Crania Britannica*, to wit, of Barnard Davis and Thurnam, and the *Excavations* of Pitt-Rivers. It contains, besides maps and other illustrations, 100 plates, every one comprising two admirably executed photographs of crania, of the natural size, and as viewed from a distant focus, so as to obviate almost wholly the usual error of foreshortening. One result of this improvement in method, by the way, is an apparent increase in the proportion of phænozygous crania, the zygomata standing out further than they would do in photographs taken in the ordinary way. I will return to this point presently.

The author begins with a short but comprehensive account of our knowledge of physical anthropology in Europe, treated historically, and starting from the point where Anders Retzius struck upon his brilliant idea of the important difference between long and broad skulls. He shows the originality of this idea, and how Blumenbach looked much to the face and forehead, but rarely depicted a full profile, and never the vertical aspect. He shows too, incidentally, how comparatively small was the material accessible to Retzius, and how much his keen insight enabled him to make of it; and how much nearer he came to the truth, as we now suppose it to be, than could have been looked for. Nor are other Scandinavian anthropologists neglected, and we find much valuable material from Sven Nilsson, Arbo, Eschricht, Von Düben, Barth, Bruzelius, &c., bearing on the subjects in hand, which may be briefly summarised as the plausibility and value of the distinction drawn by Anders Retzius between long and short skulls, and the anthropological history of Sweden, and incidentally of Denmark and Norway. A series of maps, that of Anders Retzius, my own, Ripley's, and Deuiker's, show the progress of our knowledge as to the local distribution of brachycephaly in Europe. The third chapter consists of an elaborate and most interesting description of the sepulchres whence the crania subsequently portrayed were derived, including the huge gang-graves of the Stone period, which much resemble the longbarrows of our own neolithic folk, and the large oblong kists, belonging more especially to the earlier Bronze periods of Montelius, and containing the remains of whole families or little communities. In the later Bronze period, as was the case with us, the use of cremation destroyed the continuity of historical craniology; and in Sweden the record of the Iron period was much impoverished by the same custom.

G. Retzius says very little as to the size of the long bones; apparently he is engaged in a separate study concerning them. Meanwhile, what little he does say leads one to infer that they do not indicate gigantic or even tall stature, as we count tallness, but that they may probably yield support to Professor Pearson's theory of the evolution of stature.

The author is not very fond of averages, and with his hereditary view as to the duplicity rather than the multitude of types, he avoids summarising and averaging his totals. I have, therefore, worked some of these out for myself.

I find for the—

—	Number of Skulls.	Length.	Breadth.	Index.
Stone Age - -	44	184·6	137·9	74·7
Bronze Age - -	21	187·8	138·85	73·9
Iron Age - -	52	183·7	136·1	74·1

The following refers to the more perfect male skulls only :—

—	Number.	Length.	Breadth.	Height.	Indices.	
					Lat.	Alt.
Stone Age - -	15	187·46	141·2	138·1	75·3	73·65
Bronze Age - -	10	192·	139·8	138·6	72·8	72·2
Iron Age - -	13	189·1	140·6	139·	74·35	73·5

Zygomatic breadth, with the maximum in the same skulls :—

—	Number.	Zygom.	Maximum.
Stone Age - -	15, including conjectural	128·2	139·
Bronze Age - -	5 „ „	128·2	136·8
Iron Age - -	21, excluding „	128·6	135·4

The average capacity was apparently not very different in the three periods, though a little larger in the middle one than in either of the others. In most of the specimens it could not be ascertained very accurately. By Topinard's plan ($[L \times B \times \frac{H}{2}] \div 113$) I arrive at 1,622, 1,642, and 1,634 c.c. for the available males in the three periods ; but this is, doubtless, too high an estimate. The author found about 1,500 c.c. in males of both Stone and Iron periods.

The breadth indices in the Stone period vary between 66·7 and 85·5, there being 3 brachys, 16 mesos, and 25 dolichos. These figures alone point pretty distinctly to the fact that even then there was a mixture of at least two races of men. The mere arrangement of figures would, I think, rather point to the presence of two types, one at 72 and the other at 78. It may be noted that the Danish Stone-folk were mesokephal (index 77·5, extremes 65 and 81). Retzius describes the prevailing type as elliptic, or narrow oval, dolicho- and ortho-kephalic, with small frontal region, but with prominent glabella and supraciliaries in the men ; occiput projecting, but frontal and parietal eminences small ; narrow face, low orbits and narrow palate, narrow nasal opening ; prognathism frequent. One skull, No. 33, which he takes as a good type of the mesokephals, is of a broad, rather squarish, oval ; the author, himself, of course, the best authority on the Finlanders, says that this, though not quite broad enough, reminds him of the Tavastian type. To me it recalls the Borreby and Sion types, and is not unlike some of our narrower Bronze skulls. There is at least one very Lapp-like specimen.

The Swedish Bronze crania seem to be more uniform in type, generally oval, and varying only from 68 to 82. (Danish Bronze skulls also are more dolichous than those of the Stone period). The number is rather small, and they are mostly imperfect ; the nose seems broader, the orbits higher, the face is long ; but there is no prognathism in the only four specimens available for this purpose. There is one Lapp-like

sub-brachykephal from Halland; but the mesocephalic type described just now is notably absent. The forehead is generally higher, the glabella less prominent.

Of the Iron Age skulls, the variation in index is still smaller, from 69 to 81·6 in 51, 32 dolicho-, 15 meso-, and 4 moderately brachy-kephalic. They are generally orthocephalic, leptorrhine, and mesoconch, and only 1 in 10 is prognathous; the length of face is doubtful. The zygomata have not diminished in absolute breadth since the Stone Age, it will have been noted; in relation to the maximum head-breadth they have, perhaps, even increased. I think the Scandinavian often differs from the Anglo-Saxon in that direction. It may be added that there is a distinct decrease in the hinderfrontal (stephanic) diameter; thus, Stone Age, in 37, average 113·9 mm.; Bronze Age, in 16, 113·87; Iron Age, in 50, 110·0. Thus the Iron Age folk should appear more phœnizygous in the photogravures; and I think they do. Trepanation was in use among the Swedes of the Iron Age, but, apparently, not earlier.

G. Retzius's own final conclusions are, put shortly, as follows:—

1. Dolichocephaly is the rule through all the three periods.
2. But in the Stone period the race was already a mixed one, there being present one, if not two, brachycephalic elements.
3. The available ancient crania do not lead him to suppose that any very considerable immigration into Sweden has taken place since the earliest period in question; but that the present population descends from, and represents, the prehistoric one, though in various parts of the country more or less slightly modified by foreign immigration.
4. The origin of the brachycephalic element or elements in the population of Sweden during the Stone Age cannot, at present, be determined with certainty.

Thus far the learned and cautious author; but we may venture to propound some further considerations, very doubtful, but not wholly baseless. Thus, may not the almost complete disappearance of his Tavastian type in the Bronze Age be connected with some reinforcement of the pure long-heads from the other side of the Baltic? Or was it simply worked out, as the Graverow type was in Bavaria, by some occult process of natural selection? The Iron Age type, found chiefly in Gotland, while differing slightly from the older Swedish types, as has been shown, seems to be identical with Barth's Norse Viking type.* Did it, possibly, come from across the Baltic (where, so far as we know, there were always long-headed tribes in plenty), and then press across the central, still long-headed, zone of Sweden into central Norway? Or what was the relation, if any, of these primitive brachys and mesos in Denmark and Southern Sweden to the Bronze men who conquered and overran Britain, or to the broad-headed coastmen of Southern Norway?

J. BEDDOE.

Australia, &c.

Verschuur.

At the Antipodes: Travels in Australia, New Zealand, Fiji Islands, the New Hebrides, New Caledonia, and South America. By G. Verschuur. London: **60** Sampson Low. New and cheaper edition in the "Standard Library of Travel and Adventure," 1900. Cr. 8vo, pp. x, 330, with map and plates. Price 2s. 6d.

The author's travels extended over parts of the years 1888 and 1889, and are described in a bright and interesting manner. There are drawings of "Australian aborigines" on page 35, of a "Maori family" on page 149, and a "Maori house" on page 151, of "Fijian women" on page 165, of "Native canoes" in Fiji on page 171, and of "Aborigines of the New Hebrides" on page 247.

J. L. M.

* While the 37 Iron Age skulls from Gotland (the island) are almost all dolichous, and yield indices of 73·5 and 73, 10 from Alvastra, in Eastgothland (mainland), have more resemblance to those of the Stone Age, and give average indices of 76 and 76. The figures for four indubitable males are L. 190, Br. 144·5, Zyg. 136·6, Fr. 101, Step. 118·7. Index 76·05.

Egyptology.

Steindorff.

Grabfunde des Mittleren Reichs in den Koeniglichen Museen zu Berlin. Der Sarg des Sebk-o; ein Grabfund aus Gebelén. Herausgegeben von Georg Steindorff. Berlin: W. Spemann, 1901. (Heft. ix of *Mittheilungen aus den Orientalischen Sammlungen der Koeniglichen Museen zu Berlin.*)

61

In the Egyptian collection of the Berlin Museum, as in the British Museum, the Museum of the Hermitage, and the great collection at Cairo, there are examples of the wooden coffins of the Middle Kingdom elaborately painted inside with figures of the funerary equipment of the deceased—food piled on mats, cloth, clothing, and jewelled ornaments, badges of authority, and weapons of war and of the chase. The names of the objects being attached to most of the figures the philologist is hereby supplied with much valuable information. Magic and ritual texts complete the representations; and all, doubtless, was intended, not for mere adornment, but to promote the welfare of the dead. The coffins of Mentuhotep at Berlin form an exceptionally fine example of this class. Each of the three nested oblong wooden boxes bears representations, and the paintings were in excellent condition when found (early in the last century). Fortunately coloured drawings were made of them at the time by the discoverer, for the originals suffered much in their subsequent travels. In 1865 Lepsius published the hieratic texts on these three coffins, and outlines of the paintings; the latter—carefully reproduced in coloured plates—are the subject of a very handsome volume, edited by Steindorff in a previous memoir (1896) of the series to which the present volume belongs.

Professor Steindorff's name is attached to the new publication, which deals with the remaining coffins of the Middle Kingdom in the Berlin Museum, but he was unfortunately prevented from continuing the work personally. Hence, we are deprived of several discussions promised in the first part. The staff of the Berlin Museum, however, stepped into the gap. Archæological descriptions are supplied by Professor Erman and Dr. Schaefer, the inscriptions are translated by Professor Sethe, and a special section on the strange forms of the hieroglyphs is written by Dr. Moeller. The single (inner) coffin of Sebk-o came from Thebes in Passalacqua's collection, along with the nested coffins of Mentuhotep. The representations upon it are here rendered in colour on two plates and are very interesting. Apart from food, the equipment as depicted on the left side of the coffin shows a mirror (called "see-face"), jewelled pectorals in the shapes of a hawk and of a vulture with outstretched wings, and others of more simple form, tassels to hang at the back of the neck, bracelets, anklets, and perhaps a finger ornament—all to be tied on by strings. There is also the curious *menat*, a bunch of beads used in religious ceremonies, dances, &c., intended to be held in the hand, glittering and tinkling with every motion of the holder. At the beginning of this row, in front of the mirror, is the symbol of the *ka* or "double"; perhaps this juxtaposition may be connected with the reflecting power of a mirror. The corresponding row on the right side of the coffin shows a jewelled fillet for the head, a head-rest, a doubtful article of attire, two forms of head dress, cloth of three degrees of fineness or width, two shirts or tunics elaborately coloured or jewelled, two short tunics or drawers with lions' tails attached at the back, a dagger and sheath: as emblems of power are shown the whip, two crook sceptres, two animal-head sceptres (*uas*), nine other staves or sceptres, a sort of shield (?), a globular-headed mace, a mace with flattened sharp-edged head, two bows and a sheaf of arrows, and a noosed cord (in the letterpress interpreted as a bow-string—probably correctly). At the foot end are two pairs of sandals, one of leather, the other of plaited grass; and two ties or girdles named *ankh*, from which the symbol of life (*ankh*) derived its significance; possibly they are here symbolic. At the foot are depicted eight vessels of similar shape, but of two different colours, one large white (alabaster?) vessel, and a white stand.

The discoverer's description of the grave of Mentuhotep exists, and such of the objects found with the interment as can now be identified are figured in Steindorff's publication of 1896. The coffin of Sebk-o is unfortunately an isolated relic.

We pass on to another find, from Gebelên, south of Thebes, discovered, according to the Arabs, in one tomb in the year 1897. It consists of four coffins, together with models of a boat, a granary, &c., and bows and arrows. The decorative work is far inferior to that of the Theban coffins, in fact the designs are grotesquely rude, and the forms of the hieroglyphs are abnormal. There are here no long funerary texts as on the coffins of Mentuhotep and Sebek-o, but the shorter inscriptions, well interpreted by Sethe, are not without special interest for the student of Egyptian religion. The ornamentation is only external, and consists chiefly of lines of large hieroglyphs along the sides, eyes painted at the left side opposite to where the eyes of the body would be in the old crouched form of burial, and sandals at the feet. Generally there are one or two scenes. On the coffin of a woman a scene shows her seated, one servant performing her toilet while another brings food from a stand.

The associated objects are a wooden model of a granary in a rectangular enclosure, with eight figures of persons grinding corn, making beer, &c.; a funerary barge and the row-boat to tow it; two figures of servants bearing offerings; a pair of wooden sandals, hardly intended for actual wear; horn bracelets, wooden bows, cane arrows tipped with chisel-edged flint, three clubs—one straight, one curved, the third bent at an angle, twelve models of sacks of corn; also two bowls with base prolonged into a handle, to be used as censers, and a solidly constructed stand of wood. All these objects are represented photographically.

The book is a very handsome contribution to our knowledge of Egypt, and is of many-sided interest. The publication of the material selected by its authors is thoroughly workmanlike and satisfactory.

F. LI. GRIFFITH.

Algeria: Ethnology.

Randall-MacIver & Wilkin.

Libyan Notes. By David Randall-MacIver, M.A., Laycock Student of Egyptology at Worcester College, Oxford, and Anthony Wilkin, B.A. London, **62** Macmillan, 1901. 4to, pp. viii, 113. Coloured Frontispiece and 25 Plates. Price 20s. net.

Among the Berbers of Algeria. By Anthony Wilkin. London, Fisher Unwin. 1900. 8vo, pp. xiv, 263. Sketch-map and 14 Photographic Plates. Price 16s.

In these two volumes are contained the results of a brief visit paid in the spring of 1900 to some of the less-frequented parts of Algeria. The object of the expedition was to collect evidence among the purer-blooded survivors of the old Berber stock, as to the validity of certain current theories of the relations, racial and cultural, in which this stock stands to the ancient inhabitants of Egypt, and the authors are greatly to be congratulated, both on the success which attended their observations in the field, and on the manner in which they have worked up and presented their results.

In the book which bears Mr. Wilkin's name only, the appeal is frankly to the man in the street, who knows nothing about the cephalic index, and cares less about the derivation of geometric ornament, but who may reasonably be expected to take an interest even in "native races," when they turn out, as in this case, to have so many points in common with his good-natured mongrel Philistine self. "Fully one-fifth of those [Chawia Berbers] we saw at El Arbaa were fair men—that is to say, men who would be counted fair in this country. Blue and grey eyes were even commoner than light (sometimes flaxen) hair. . . . Skins were white, or would have been if they had not been encrusted with the dirt of untold months. . . . We felt ourselves at home among so many rosy countenances; indeed, one youngster would have been taken anywhere but in his own village (where he would be without

"honour) for a freckled wee Scotchman" (pp. 77-9). Of these and kindred Kabyle folk, of their beautiful highlands, of the countless relics of bygone modes of life which strike the eye there at every turn, and of the quaint trivialities of cross-country travel, Mr. Wilkin has much to tell, and tells it in an easy animated fashion which makes his book seem at first reading less full of matter than it really is. We could wish, nevertheless, even so, that he had sometimes taken his public a shade more seriously; word pictures like that of the Chawia potter and weaver (pp. 128-130) have a way of sticking in the memory which makes us wish there were more of them. The illustrations, from the author's own photographs, are admirable, and add greatly to the attractiveness of the book.

The joint work, entitled *Libyan Notes*, contains a more detailed discussion of the problems which suggested the journey. Ever since Professor Flinders Petrie's announcement of a "New Race" in Egypt, the question of the race-relation of the Nile Valley to the rest of North Africa has entered a new phase, and the view has been widely held, with more or less modification in detail, first, that the course of the primitive civilisation of Egypt was largely influenced, if not determined, by that of ancient Libya immediately to the westward; and, secondly, that to account for this cultural influence a strong "Libyan" element must be presumed in the composition of the Egyptian people.

In regard to the first point, subsequent excavations in Egypt, in which Mr. Randall-MacIver himself has had some share, have resulted in the elaboration of an unrivalled sequence-series of prehistoric pottery, so typical of the character of the material civilisation as a whole, that it is to the ceramic industries of Libya that one instinctively turns for the crucial counterpart; while by great good luck the Algerian journey resulted in the collection not only of a number of fine specimens of the commoner styles of the well known "Kabyle pottery," but also of examples of several local fabrics which hardly go abroad at all; and, best of all, of precise observations of the localities and of the processes and materials which are employed. On this collection, which attracted much attention when it was exhibited at the Anthropological Institute last summer, and which is now to be seen in the Pitt-Rivers Museum in Oxford, the authors have founded a careful comparison of Berber and proto-Egyptian pottery, and come to the guarded conclusion that while some of the simpler fabrics are common to the two civilisations, and have persisted almost unchanged in Kabylia and the Aurès mountains down to the present day, others are either peculiar to Egypt or can be shown to have been derived by Egypt from non-Libyan sources. Of the non-Egyptian elements in the Kabyle and Chawia styles, on the other hand, some of the most distinctive are certainly of later introduction (probably from Cyprus, *via* Carthage), leaving only a small remainder to be attributed to a hypothetical Iberian origin; so that, on the whole, Egypt seems rather to have dominated Libya in early times than *vice versa*. These arguments, of which only the briefest outline is permissible here, are worked out with great detail and full illustration, and, on the evidence which is available at present, may be accepted with confidence. Only three important points are very slightly dealt with: first, hardly anything is said of the native names of the processes or of the elements of the ornamentation, though a good many Berber terms are given in other sections of the book; second, no analysis is attempted of these same ornamental designs, nor is the very suggestive inference as to the importation of Cypriote motives in Græco-Phœnician times worked out, as it deserves, in comparison with the Carthaginian and Cypriote *répertoires*; third, no mention is made of the remarkable series of parallels, both of form and ornament, which is supplied by the Early Bronze Age pottery of Sicily. None of these omissions, however, affect the validity of the main inference as to the relation of the Libyan fabrics to the proto-Egyptian; the first would have confirmatory value only; the other two bear rather on the origin of the later and non-Egyptian elements in Kabyle art.

Turning now to the question of community of race, the authors have a sufficiently decisive answer. Neither the skull measurements, nor the head measurements of living Kabyle and Chawia individuals, afford the smallest support to the theory of a Libyan element in the early population of Egypt. Taking the evidence of the cephalic index as typical of the rest, "the difference between 742" [the lowest Berber figure] "and 721 (rather, probably, 712)" [the figures for skulls from Abydos and Hou respectively] "is too great to be explained away. . . . The cephalic index, then, absolutely forbids any identification of the prehistoric Egyptians with the Berbers" (p. 206). Such language is precise and explicit, but it is based on a large induction (as such series go), and is quite borne out by the evidence, which is discussed and tabulated in an original and effective fashion, and illustrated by a large number of photographs of individuals; special note being due to the ingenious and uncanny "vault views" in Plate XXV.

It must not be supposed, however, that the whole of these *Libyan Notes* are devoted to pot fabrics and anthropometry, or even to subsidiary arguments from history or archaeology on the Egypto-Libyan question. Besides an introductory note on the literary allusions to the old Libyans, and an excellent summary of recent French research on the language and social institutions of the modern Berbers, the book contains a valuable account of dolmen-sites at Bou Nouara, Bou Merzong, and Roknia, and of a new site at Msila, near Bordj-bou-Areridj, with an analysis of the meagre results of excavations up to date, with numerous photographs and useful facsimiles of the skulls from Roknia, described long ago by General Faidherbe. There are also a number of careful descriptions of Kabyle and Chawia architecture, of the primitive loom and oil-mill, and of other implements and processes of considerable ethnographical importance.

J. L. MYRES.

Biography: Huxley.

Mitchell.

Thomas Henry Huxley: A Sketch of his Life and Work. By P. Chalmers Mitchell, M.A. ("Leaders of Science" Series). New York and London. **63** Putmans. 1900. 8vo, pp. xviii, 297. Price 5s.

This book, written long before the completion of the "Life and Letters," which it closely followed in order of publication, is an admirable little work of 285 pages, embodying a classified account of the life and work of Huxley, with the author's impressions of his published writings, and personal narratives largely culled from obituary notices and studies of the great man by persons with whom he was especially familiar. It is divided into 17 chapters, and gives a well-arranged and succinct narrative of the chief incidents in his life, and a corresponding account of the more important memoirs, lectures, and addresses which have rendered the name of Huxley epoch-marking in science, education, and philosophy. Apropos of passing allusion to his most intimate friends and contemporaries who were concerned in the scientific triumphs of his time, there are introduced portraits of Darwin, Hooker, and Lyell. Of Huxley himself three portraits are given, one at the age of 32; one in later life, the choice of which is not altogether the most fortunate; and a third, the famous caricature of himself drawn in 1848 while visiting Australia.

Of the book it may be said that the portion dealing with Huxley's scientific work is admirable. Concise and connected in its method, it gives the lay reader an altogether excellent notion of the trend of his mind in his triumphs as an observer and thinker. The Tunicate controversy, the great work on the Medusæ, the Skull, and on the Cephalous Mollusca, are all rendered clear; and the Man and Ape achievement which led to his "Man's Place in Nature" that will ever remain one of his foremost

successes, are each in turn dealt with. And concerning the latter, while it is well-known how, in its progress, the posterior cornu of the lateral ventricle of the brain played a leading part, in consideration of the brevity of Mr. Mitchell's statement concerning it, it is opportune to record the fact that Professor D. J. Cunningham in 1886 announced the interesting discovery (Cunningham Mem. No. II., R. Irish Acad., p. 128) of the absence of this cavity on one side of the brain of an Orang, regarding it as possible that Owen "may in the first instance have been misled by an " abnormal brain of this kind."

Referring to Huxley's book on "Physiography," Mr. Mitchell rightly gives 1880 as the date of publication, but in his context he refers to it as though directly associated with the editorship of the Macmillan series of Science Primers, the Introductory volume to which was from Huxley's pen. We would point out that the "Physiography" was really based on the Notes of a Course of Lectures, first delivered at the London Institution in 1869, and afterwards repeated at the South Kensington Museum (as is duly explained in the preface to the work), and that perusal of the detailed syllabus which was issued for use at the lectures and of the book itself, shows that the central idea which led to the educational triumph of Huxley as a teacher, and which in reality permeated all his subsequent writings for the student—the creation and development of the Type System—first took shape in this association.

Passing to that portion of Mr. Mitchell's book which deals with Huxley as a philosopher and writer and speaker, it must be admitted in most respects excellent. As giving a summary of his views on topics social, religious, political, and educational, it is most interesting reading, except perhaps for the somewhat morbid view our author has taken of the intended refrain of the Romanes Lecture at Oxford, which he does not seem to have rightly interpreted. Here, as in the earlier portion of the book, there are certain matters of detail upon which we would desire to comment, and chiefly his statements concerning "style." On page 215 we read that "Huxley lacked the " sedulous concern for words themselves as things valuable and delightful," and again on page 217 that he "produced his effects by the ordering of his ideas and not . . . " of his words "; indeed, Chapter XII., from which these words are cited, is permeated by this conviction, and we venture to think that in framing it our author is at fault. He makes no allowance for the fact that "style" is relative to aim and object in writing or speaking, and to context, and that it has to be determined by the nature of the subject-matter in hand. To do him justice, however, in arguing that the idea and not the expression—the academic choice of words—was the dominant impulse in Huxley's method, which is tantamount to regarding him as technical rather than intellectual, we are bound to point out that he is not depreciating Huxley's merits as a writer of English, but rather seeking to classify his position among the writers of his period than to criticise. We nevertheless consider him in the wrong, and hope that in any future editions of his book he will at least modify his views on this point.

There are one or two small inaccuracies in the book which cannot pass unnoticed. Huxley was of greater than "middle stature," and it is saying too much to state that "while at work he smoked continuously." After he was 40 he smoked a good deal, but never while working. And, similarly, the "strains occasionally heard from his room" were those of his own voice and not, as is stated in the passage our author had in mind, of "a fiddle." In writing of Huxley's Scientific Memoirs Mr. Mitchell refers the reader to the reprint of these now in course of publication as a series of Memorial Volumes, and it becomes necessary for us to point out that the prefatory list of titles as originally printed in the first of these is deplorably deficient. The omissions have been mostly made good in the later list which is incorporated in the *Life and Letters*; but even here the Rede lecture of 1886 on "Animal Forms" (published in *Nature* at the time of delivery) though mentioned in the text, does not appear in the classified record.

And it is a remarkable fact that in no book thus far printed on Huxley's work does there appear the title of his great Survey Memoir of 1877 on the Elgin Crocodilli, or his 1886 definition of Agnosticism, which is one of the most concise and characteristic, if not the very best, things he ever wrote. G. B. H.

Folklore.

Various Authors.

Popular Studies in Mythology, Romance, and Folklore. London: D. Nutt, 1899, 1900. Price 6d. each. Presented by the publisher.

64

1. *Celtic and Mediæval Romance.* By A. Nutt.
2. *Folklore, what is it and what is the good of it?* By E. S. Hartland.
3. *Ossian and the Ossianic Literature.* By A. Nutt.
4. *King Arthur and his Knights.* By Jessie L. Weston.
5. *The Popular Poetry of the Finns.* By C. J. Billson.
6. *The Fairy Mythology of Shakespeare.* By A. Nutt.
7. *Mythology and Folktales.* By E. S. Hartland.
8. *Cuchulainn, the Irish Achilles.* By A. Nutt.
9. *The Rigveda.* By E. V. Arnold.

By undertaking the publication of these booklets Mr. Nutt has earned the gratitude of all who are interested in folklore and romantic literature, and of many who would like to take an interest in them but hardly know where to begin their studies. The series is the work of specialists, who treat their subjects concisely, confining themselves to a broad survey of the theme; not the least valuable feature is a bibliographical appendix to aid those who find their appetite whetted by what is here put before them and wish to go more deeply into the subject. The enthusiasm excited by the work of the brothers Grimm raised the collection of folklore in Germany to the position of a national duty. England did not begin the task of collecting her folkbeliefs and tales until long after, and found her harvest correspondingly diminished; even now, the interest aroused by this subject is not to be compared with the enthusiasm of Germany, where in some parts 1 in 3,500 of the population is a member of a folklore society. This want of interest in England arises, perhaps, from a lack of knowledge of what folklore really is; there are others besides Mr. Hartland's musical friend who will look at you with compassion, and say: "Ah, yes, the Folklore Society," under the impression that folklore means nothing but cures for warts, and creepy stories. But after all, the investigation of traditional customs, beliefs, and tales is at least as worthy of being called anthropology as the study of bones and stones. Other animals besides man have bones; and stones are only interesting to the anthropologist if they bear traces of human ingenuity. Primitive religion and philosophy cannot be relegated to an inferior place unless the mind of man is less important than his body or his works.

The series is, however, intended more for the general reader. The practical man, who looks down on "antiquarianism" of all sorts, will learn from Mr. Hartland that we have to-day an Irish question because our forefathers were not anthropologists. Those whose taste lies in the direction of romance will find in Mr. Nutt a reliable guide in the highways and byways of Celtic hero stories, and on the more familiar ground of the fairy mythology of Shakespeare. If they find Mr. Nutt's fascinating studies all too short, their needs are provided for by the bibliographical appendix which has wisely been made a feature of the whole series. Miss Weston's contribution should be found especially useful; the average Englishman has never yet learned anything of the sources of his national literature, but he will here find a royal road to repentance. Mr. Hartland in his contribution on *Folktales* puts some awkward questions to the borrowing school; the bibliography of America is perhaps unnecessarily limited; Rink

has published *Tales of the Eskimo*; for Canada, Petitot's *Traditions Indiennes* should certainly have been mentioned; Rand's *Legends of the Micmacs* are an important collection; Lummis has published a number of Pueblo stories; for South America the works of Thevet and D'Orbigny contain a good deal of matter. Mr. Billson's account of Finnish poetry is very readable. Mr. Arnold is less successful in dealing with the *Rigveda*. We can hardly imagine the following statements meeting with general acceptance in England:—"In the period in which the ancestors of the Aryan peoples " still formed a single nation, they were united by a system of religion constructed by " the wisdom of their statesmen and poets. The supreme objects of worship were " principally such natural objects as the Sky, the Dawn, the Twin Stars, and the " Storm " (p. 36). The latter statements are hardly consistent with what we learn on pp. 21, 22, and the evidence for a cult of Ushas has still to be brought forward. Mr. Arnold would have done better to steer clear of theory.

N. W. T.

Trepanning: Prehistoric.

Pittard.

Sur une trépanation préhistorique de l'âge du bronze. By Eugène Pittard.
(Extract from *Archives des sciences physiques et naturelles*. Genève, 1899.)

65

In this communication M. Pittard describes a skull, found some years ago at Sallanches, and assigned from its surroundings to the Bronze Age of culture. Owing to *post mortem* injuries, the vault of the cranium only is left; of this, the right parietal eminence has been removed, leaving an almost circular wound, with oblique edges, in which the diploe is hidden throughout the whole circumference by a cicatricial callous mass uniting the inner and outer tables of bone. It is thus evident that the injury was survived for a considerable time, while the regular outline of the wound and the absence of other injury would seem to show that it had been produced by deliberate operation, and not by any blow accidental or homicidal. The chief interest attaching to this skull arises from the period to which it is assigned, evidences of trephining in the Bronze Age being exceedingly rare, although the operation seems to have been comparatively frequent in neolithic times. Of the technique of this particular operation we are of course ignorant, but as various savage tribes have within comparatively modern times practised trephining, we can suppose prehistoric man operated in a somewhat similar manner. Ella, in the *Medical Times* for 1874, describes the islanders of the South Pacific as making a T-shaped incision through the scalp, and then gently scraping away the surface of the cranium with a shark's tooth until they reach the *dura mater*. In the Aures mountains, according to Dr. Védiennes, the operation was performed in two stages. In the first, the surface of the bone was laid bare, and a small area marked out by holes drilled through the bone with a pointed iron or bronze rod, and the wound dressed for 24 days. At the end of this time the portion of cranium between the holes, which would have been loosened by necrotic processes, was removed by a blunt hook.

As far as we can judge from the figure appended to M. Pittard's paper, the former method would seem more probable than the latter. Some day further discoveries may reveal the precise surgical technique of our remote ancestors, and carry still further back the history of the medical profession. One further point, which must strike all readers of M. Pittard's paper, and of other communications on this subject, is the extraordinary resistance of primitive man to the septic organisms which till recently played such havoc among civilised communities, and, until the introduction of antiseptics, fettered the energies of the foremost surgeons of the day.

F. C. SHRUBSALL.

ORIGINAL ARTICLES.

Kent: Flint Implements. With Plate F.

Newton.

The Occurrence in a very Limited Area of the Rudest with the Finer Forms of Worked Stones.

66

Among the numerous discoveries in the area of what may be termed the West Kent Palaeolithic deposits, there has been none of greater interest than that made in the year 1899 at Greenhithe. The pick and spade of workmen laid bare an old-world river-bed, highly fossiliferous and containing many stone implements of great beauty in workmanship, associated with others of more primitive form, and also some whose only claim to recognition as implements lies in that portion of the natural stone exhibiting signs of much use.

Public attention was first directed to the discovery by Mr. H. Stopes at a meeting of the Anthropological Institute of May 15, 1900 (*Journal of the Institute*, Vol. XXX., N.S. II., page 302), and the containing bed is described as an "exceedingly fossiliferous" band of stratified sands and gravels capped with a thin layer of tough clay." The actual elevation of this deposit is about 80 feet above Ordnance datum, and a deep valley lies to the eastward between it and Milton Street, a locality well known as a happy hunting ground for palaeolithic implements. From the nature and elevation of this deposit, now known as the Greenhithe shell-bed, the palaeontological and geological evidence prove the immense antiquity claimed for the river drift by well-known writers on the subject. In addition to the published list of vertebrate and invertebrate fauna, a large number of species have been recently recovered which will show this deposit to be one of the most important, if not absolutely the most important of its kind that has yet been discovered, further accounts of which will shortly be laid before the geological world. I might, however, say, that from amongst the quantities of the material comprising the shell-bed which I have forwarded to Mr. W. J. Lewis Abbott, F.G.S., for working, that gentleman has recovered species suggesting a closer relation to pliocene beds than have previously been found in the Thames Valley.

This remarkable shell-bed is a few miles almost due north of the locality where Mr. B. Harrison has made his most important finds of plateau implements, and the surrounding country is teeming with evidence of the earliest appearance of man. Some years ago, Sir John Evans in a genial manner rebuked Mr. Harrison for desiring to claim the county of Kent as the birth-place of the human race, but in the second edition of his great work on *The Ancient Stone Implements of Great Britain*, Sir John Evans gives it as his opinion that the "numerous and important discoveries made during the last thirty years by Mr. Benjamin Harrison of Ightham," as interpreted by Sir Joseph Prestwich, "have done much to revolutionize our ideas as to the age and character of the drift deposits capping the chalk downs in western Kent, north of the escarpment facing the Weald."

This valuable expression of opinion of so cautious an observer assists us greatly to appreciate the high antiquity of the Greenhithe shell-bed deposits. The old tributary to which we are indebted for so many interesting accumulations flowed from greater heights in the Weald than now exist into the valley of the larger river, which, under its diminished form, is now known as the Thames, and whose bed was probably 70 or 80 feet higher than it now is.

On its northern journey into the Thames Valley the old stream received the relics of the various land surfaces over which it passed, ultimately storing them up on the ancient terrace and forming a veritable treasure house for the delectation of the prehistoric anthropologist of to-day.

With respect to the illustrations of implements found in the shell-bed, it will be noted by any one familiar with the subject that the ordinary pointed or *hache* shape is

absent. The writer has only seen one of this form from the deposit, and that was of small dimensions.

In the Milton Street gravels on the other side of the valley the *hache* shape abounds. In the shell-bed the flat ovate form appears to predominate, and the proportion of such implements with an ogival twist is large.

Nos. 1 and 2 in the photograph are of the rudest possible type of implement, having very little human work upon them. No. 3 is a perfect pebble, and No. 4 a rough piece of tabular flint, but both are excellent examples of hollow scrapers and have been well used. No. 5 appears to have been made and used for a double purpose, the right depression, as seen in photograph, having been used for scraping, and the left for rubbing. Nos. 6 to 11 are of the commoner palæolithic forms, except No. 9, which has a very pronounced twist. Nos. 12 and 13 form a pair of side scrapers suggestive of left and right hand use, as may be seen by a curious little projection at one end. Nos. 14 to 18 are very fine examples, they have sharp edges, especially Nos. 14 and 16, the latter having the ogival twist. To Mr. Lewis Abbott is due the recognition of Ostracoda on specimen No. 1. Since making the photograph the writer has obtained from the bed another side scraper of larger dimensions, and with a remarkable undercutting to sharpen the scraping edge.

W. M. NEWTON.

Australia.

Spencer-Gillen Expedition.

The Australian Ethnological Expedition. By N. W. Thomas, M.A.

The ethnological expedition of Prof. Baldwin Spencer and Mr. F. J. Gillen started some three months ago for the interior of Australia.

67

Starting from Adelaide, the party proceeded to Oodnadatta by train. There they were to be joined by Mounted-Constable Chance, who had gone on ahead with the stores. He is an experienced bushman, and well acquainted with the country. From the terminus of the railway line the travellers were to follow the telegraph line to Alice Springs. Food depôts have been established at all the telegraph stations along the line. The ethnologists will spend some time with the various tribes through the continent, and make excursions east and west of the telegraph line to fertile spots where natives congregate. When they get to Powell's Creek, which will be one of their main depôts, they will leave the line and cross into Queensland to Camowéal, where they hope to connect their labours with the investigations conducted by Dr. Roth, the Protector of Aborigines of Queensland. Afterwards they will return to the telegraph line, and continue their journey northwards, taking the tribes along the big rivers in the Territory. If time permits they will strike across to Wyndham, in Western Australia.

Language, history, customs, habits, ceremonies, religions, laws, will all be carefully investigated and noted, and the records of the journey are likely to be very complete. The scientists are taking with them a magnificent equipment, which includes a first-class cinematograph, with which they will take pictures of corroborees and secret ceremonies, and also a fine phonograph, presented by Mr. J. Angas Johnson, of Adelaide. Large impressions will be taken by it, and these will be capable of being multiplied indefinitely on small cylinders. A vast amount of photographic material has been distributed at the various depôts, and with it careful records will be obtained of types, ceremonies, and gatherings of the tribes. Weapons and implements of each race will be procured, and anthropometric records of each section of the black people carefully preserved. Collections of the flora and fauna of the country traversed will be made. Professor Spencer will pay particular attention to zoological work. It is needless to say that the good wishes of all anthropologists go with the party. The expedition is expected to last about a year.

If we can hardly expect such startling discoveries from the present expedition as from the preceding one, it is certain that no more valuable work could be done than that to be carried out by Messrs. Spencer and Gillen. The native tribes of Central Australia are not only left untouched by European influence; they seem to have lived remote from all outside influence for a lengthened period.

Anthropology owes a debt of gratitude both to the Australian Governments, who so readily acceded to the memorial in favour of the expedition, and also to those who are bearing the cost of it.

The Victorian authorities are paying a substitute to take the Professor's place, and the South Australian Government have given Mr. Gillen leave of absence for one year on full pay. The cost of the expedition is being borne by Mr. David Syme and Mr. Rubin Spencer, of Manchester—Professor Spencer's father. The former has contributed 1,000*l.* and the latter 500*l.* towards contingent expenses. The Government of South Australia has shown great practical sympathy with the work. The Commissioner of Crown Lands has presented to the travellers the express vehicle built for and used by Lord Kintore in his trip through the continent, and a splendid team of four horses.

N. W. T.

Religion.

Lang.

The Martyrdom of St. Dasius. By A. Lang, M.A. (See MAN, 1901, 53.)

The variations of M. Cumont's opinions as to the legend of St. Dasius may easily be traced. He first published the Greek narratives (the longest MS. being now printed for the first time) in *Analecta Bollandiana* (t. xvi., 1897). He was then sceptical about the story, as he deemed the Greek an incorrect translation from the original Latin, made for an edifying purpose by an author so unscrupulous as to put the Nicene Creed in the mouth of St. Dasius—"before it was made." The story, moreover, was inconsistent with observation of the Imperial edict against human sacrifice. Moreover, the 30 days of mock royalty are unknown. M. Cumont, therefore, thought that St. Dasius only refused to sacrifice to Saturn; and, indeed, in the new MS. he does decline, when urged by Bassus, his commanding officer, to offer incense to the Imperial images, and is executed for no other reason.

But, in the *Revue de Philologie*, 1897, pp. 143-149, M. Parmentier, while admitting the difficulties, asked whether the memory of an ancient and cruel rite might not have been revived at the Saturnalian debauch in Mœsia, thanks to the license of the persecution against the Christians? The Greek author of the Dasius legend might then use this circumstance for his pious purposes. M. Parmentier then quoted the only evidence for the hanging the mock king at the Persian Sacæa. As we know, it is merely a statement put by Dio Chrysostom into the mouth of the Cynic Diogenes. No other surviving writer on the Sacæa, while describing the festival, mentions the hanging of the mock king. M. Parmentier then suggests that an Oriental human sacrifice would come to be "completely confounded, in character and date, with "their own Saturnalia by the Romans." Their Saturn answered to Cronos, and Cronos received human sacrifices. In M. Parmentier's view, the Mœsian case of St. Dasius (A.D. 303) was the "result of military importation of Oriental usages." Mœsia contains many monuments of Mithra worship, which are also of military importation, and a similar importation may have been the alleged attempt to sacrifice a Christian private at the Saturnalia: "a bloody comedy at a military festival, when the license of "persecution must have unchained the most cruel instincts."

M. Cumont now (*op. cit.*, pp. 149-153) revised his original opinion. He "thought "the hypothesis, that, in the East, the Roman Saturnalia had been blended with . . .

"the Sacæa, very attractive." Oriental slaves in Rome would lend their influence. Like MM. Frazer and Meissner, he inclined to identify the Sacæa, Zagmuk, and Purim. Meyer and Jastrow refuse to admit this, and the date of the Sacæa (either July or September) makes the identification impossible, Purim being in March. M. Cumont (as in *Man*, 1901, No. 53), gave examples of human sacrifices at Rome in the second-fourth centuries of our era. I do not quite understand whether M. Cumont now regards the military sacrifice of a mock king, like St. Dasius, as an Oriental infiltration, as M. Parmentier did, or as a recrudescence or survival of a Roman rite—utterly unknown to Roman antiquaries. Judging from M. Cumont's essay, *Le Taurobole*, which he has kindly sent me (*Revue d'Histoire et de la Littérature religieuses*, t. vi, 1901, No. 2), he looks on that rite as of Oriental importation. If he thinks the same of the Mæsiian case of St. Dasius, it affords no proof of native Italian sacrifices of a mock king. The period of 30 days assigned to the mock reign of the mock king in Mæsia does not correspond with the duration either of the Sacæa or of the Saturnalia; and the date (November—December) in Mæsia is remote from the date (July or September) of the Sacæa. Again, sacrifice (as in Mæsia) is not whipping and hanging, as at the Sacæa, and, unlike the Sacæan victim, the Mæsiian is not stripped of his royal robes.

While evidence and opinion are in this condition, it seems rather premature to argue, from the apologue of Dio and the Dasius legend, that kings in Italy and Babylon used at one time to be sacrificed annually, that the gods whom they incarnated might find fresh bodies for their reception. We know no case in which a king is sacrificed to release the god whom he incarnates, and we know no instance of the yearly slaying (let alone sacrifice) of a king. Nobody would take the billet, in the circumstances, and no dynasty, no country, would endure such a proceeding.

A. LANG.

Algeria: Ethnography.

Capart.

On the "Libyan Notes" of Messrs. Randall-MacIver and Wilkin. By Jean Capart, conservateur-adjoint du Musée de Bruxelles.

69

Les découvertes des dernières années en Egypte ont ouvert aux chercheurs un nouveau champ d'observations d'une fécondité extraordinaire non seulement pour l'étude de l'antique Egypte mais aussi pour les recherches relatives à la préhistoire de tous les peuples méditerranéens.

Il semble ressortir de tous les travaux publiés jusqu'à l'heure actuelle que le premier fond de la population de l'Egypte était formé par des éléments nègres sur lesquels seraient venues se superposer des populations blondes à peau blanche dont le type se serait conservé assez pur parmi les berbères. A ces deux éléments primordiaux il faudrait peut être en ajouter un troisième, Boschimans, Hottentots. Dans quelle proportion? A quel moment de la période préhistorique? Cela serait difficile à préciser. L'entrée ultérieure des familles sémitiques en Egypte se fit-elle en une ou plusieurs invasions? L'hypothèse d'invasions successives permettrait d'expliquer beaucoup de faits encore obscurs mais n'est pas encore prouvée d'une manière suffisante. Ce qui paraît certain, c'est que les envahisseurs égyptiens vinrent du pays de Pount sur la côte orientale de l'Afrique.

On avait été profondément frappé dès le début par les analogies nombreuses que l'on constatait entre les préhistoriques Egyptiens et les modernes Kabyles; notamment les procédés de fabrication et de décoration des poteries semblaient identiques de part et d'autre.

Il était donc hautement désirable de voir quelqu'un au courant des études préhistoriques égyptiennes entreprendre un voyage d'études scientifiques dans le domaine des peuples de race libyenne.

Cette tâche a été assumée par deux savants anglais, David Randall-MacIver et Anthony Wilkin.

Le premier est déjà suffisamment connu par ses travaux faits sous la direction du savant explorateur anglais Flinders Petrie. Peu de temps avant le voyage, M. MacIver avait présenté à l'Institut Anthropologique de Grande Bretagne, un important travail, dans lequel il concluait à l'identité des préhistoriques égyptiens et des Libyens, cherchant par là, comme il le disait en commençant sa communication, à montrer l'aide importante que l'anthropologie pouvait apporter à l'archéologie. Aujourd'hui, le voyage terminé, et les résultats mis en ordre, les auteurs ont changé d'avis, et, remarquons-le immédiatement, uniquement en se basant sur leurs nouvelles mensurations : ce qui peut à bon droit nous rendre suspects, dans le cas présent, les services de l'anthropologie. Leur appui serait en effet immense s'il venait confirmer toutes les autres données qui sont si concluantes à mon avis qu'il faut bien admettre qu'une cause quelconque est venue vicié les résultats des mensurations. Cette cause ne serait-elle pas à chercher uniquement dans l'espace de temps énorme qui sépare nos préhistoriques égyptiens des modernes kabyles, espace de temps qui a permis et favorisé bien des mélanges ?

On sent au cours du livre combien MM. MacIver et Wilkin sont gênés par les résultats. Il leur est nécessaire à chaque pas de parler de rapports de commerce intenses ou de recourir à certaines subtilités pour expliquer les analogies de coutume.

La question est encore si peu mûre, tant de documents de première nécessité font défaut (par exemple des fouilles méthodiques dans le nord de l'Afrique à ce point de vue spécial) qu'il est dangereux de se prononcer aussi catégoriquement que le font les auteurs. Je regrette qu'ils ne se soient pas contentés de donner au public savant le compte rendu de leur exploration avec la masse énorme de précieux documents qu'elle a fait connaître, sans chercher pour cela à décider la question du "Libyen ou non" des préhistoriques égyptiens.

Il serait téméraire sinon insensé après la critique qui précède de vouloir à mon tour essayer de tirer une conclusion quelconque des documents rapportés par MM. MacIver et Wilkin ; cependant je pense utile de résumer ici quelques unes des questions traitées par les auteurs en prenant l'hypothèse contraire à la leur.

Cette hypothèse n'est pas nouvelle et c'est à quoi était arrivé dès 1861, Pruner-bey à la fin de ses recherches sur l'ancienne race égyptienne. Voici comment le docteur Abbate-pacha résumait la question dans le bulletin de l'Institut égyptien 1882 : "Ne trouvant du côté de l'Orient que des incertitudes, l'auteur se tourne vers l'Occident ; il compare le type avec celui de la race libyque ou berbère, et cette fois la ressemblance lui paraît complète."

Plus récemment le professeur Sergi, exposant ses idées sur les habitants primitifs de la Méditerranée pensait qu'une grande famille humaine, "les Ibéro-Liguro-Libyens" avait précédé dans le bassin de la Méditerranée les races sémitiques et aryennes. Les Ibères, les Sicules et les Ligures présenteraient en effet les mêmes éléments ethniques. Le professeur Sergi démontre ensuite par l'analyse morphologique des crânes des anciens Égyptiens, que ceux-ci possèdent beaucoup de caractères communs aux peuples de l'Ouest de la Méditerranée dont il vient d'être fait mention. Les anciens égyptiens seraient donc des Libyens. En résumé les recherches de notre confrère, dit le baron de Loë à qui j'emprunte ce résumé, établiraient l'existence depuis un temps immémorial d'une famille humaine méditerranéenne composée de plusieurs variétés."

Spécialement au point de vue égyptien, la même hypothèse est soutenue par M. Deniker dans son récent ouvrage sur les peuples et les races de la terre.

Quelle aurait été la langue de cette population méditerranéenne ? Une série de dialectes berbères, s'il est permis d'employer ce terme dans le sens étendu de la sorte. Cette langue s'écrivait au moyen de signes que nous retrouvons dans l'alphabet libyen. Les découvertes de Evans et de Petrie ne montrent-elles pas à l'évidence l'emploi de

ces caractères en Crète, en Asie Mineure (Carie), en Egypte, en Espagne, alors qu'on les avait déjà rencontrés depuis la péninsule sinaïtique jusqu'aux îles Canaries sur tout le littoral africain et même à ce qu'il paraît, sur les dolmens pyrénéens. Cela n'expliquerait-il pas en même temps les analogies frappantes que l'on a constatées entre l'ancien égyptien et le berbère (voir notamment l'article capital de Rochemonteix que MM. Mac-Iver et Wilkin ne citent pas), entre l'ancien égyptien et le basque, ce qui avait toujours paru un brillant paradoxe. Les auteurs considèrent la chose jugée relativement aux rapports entre l'égyptien et le berbère en s'appuyant sur l'autorité du professeur Erman qui a déclaré qu'il regardait l'ancien égyptien comme une langue sémitique. La chose n'est pas encore aussi claire qu'on pourrait le croire et je suis heureux de pouvoir noter ici la protestation de M. Maspero contre ce qu'il appelle "la sémitisation à outrance de la langue et de la population égyptiennes."

La même aire est caractérisée par une série de monuments appelés dolmens, qui se montrent extrêmement nombreux sur la côte africaine mais qu'on a rencontrés un peu partout sur le pourtour de la Méditerranée. Les auteurs ont exploré un certain nombre de cercles de pierres avec dolmen et après avoir discuté d'une manière extrêmement intéressante les différentes hypothèses qui ont surgi à leur propos, constatent qu'il est de la plus haute signification de remarquer qu'on n'a pas trouvé trace de semblables constructions en Egypte, alors qu'elles sont si fréquentes en Algérie. Cela leur permet de faire les réflexions suivantes : "Nous avons vu qu'il existe de telles coïncidences entre la plus ancienne population des deux contrées qu'elles peuvent être seulement expliquées en supposant ou bien qu'il y avait entre elles des rapports continuels et étroits ou bien que les populations de l'une et de l'autre étaient identiques. Mais, ajoutent ils, si les peuples primitifs montrent de la tenacité dans leurs traditions artistiques, ils sont encore beaucoup plus tenaces dans leurs coutumes funéraires. Comment se fait il que les Egyptiens, s'ils étaient libyens de race n'aient jamais fait usage de dolmens ou de cercles ? La coutume funéraire des libyens les rapproche des anciennes races européennes et des Amorites en Syrie, mais les isole complètement des habitants de l'Egypte à quelque période que ce soit, soit ancienne, soit récente."

L'argument présenté de la sorte ne manque pas d'une certaine vigueur ; si de part et d'autre de l'Egypte, chez les Amorites et chez les Libyens nous trouvons le même système de sépulture sans le rencontrer en Egypte, ce serait là un phénomène embarrassant à expliquer. Heureusement qu'il n'en est pas ainsi et que nous connaissons pour le moment déjà au moins un cercle de pierres avec dolmen, du plus beau type saharien qu'il se puisse imaginer. Il a été découvert il y a plusieurs années déjà dans le désert près d'Edfou dans la Haute Egypte par M. Legrain dont le dessin a été publié dans la livre de M. de Morgan sur les Origines de l'Egypte.

Il n'a malheureusement pas été fouillé jusqu'à présent et nous ne savons pas si comme dans les dolmens de l'Algérie ou dans les sépultures préhistoriques des Baléares, pour ne citer que cet exemple, les corps étaient placés dans la position embryonnaire ; mais ce qui est certain, c'est que cette position est celle de la plupart des tombes préhistoriques d'Egypte.

Le contenu de ces tombes est extrêmement intéressant. A côté des nombreuses poteries se trouvent des instruments en silex aux formes les plus variées. Je ne veux pas m'attarder ici à rappeler les analogies de formes qu'ils présentent en Egypte, en Libye ou ailleurs ; je me contenterai de citer les formes des silex décrits par le R. P. Germer-Durand et découverts en Palestine, ceux si nombreux qu'on trouve en quantité dans le Sahara, notamment à Ouargla et à El-Goléa, enfin, ce qui est plus frappant pour nous, l'identité qui existe entre les formes et les procédés d'extraction du silex à Wadi el Sheikh (découvertes de Seton Karr) et à Spiennes en Belgique.

L'étude de la céramique n'est pas moins intéressante et les auteurs des "Libyan

Notes" concluent non seulement à l'identité de forme et de décoration mais aussi à l'identité de procédés. Notons que pour rendre compte de toutes les variétés de poteries encore en usage aujourd'hui en Kabylie ils sont obligés d'aller chercher leurs analogues dans l'Égypte préhistorique, dans l'île de Chypre, dans les Terramares de l'Italie et dans les tombes de Sicile.

Différentes tombes égyptiennes nous ont fait connaître aussi un certain nombre de petites figurines de femmes présentant des particularités extrêmement curieuses que les fouilles de M. Piette dans les grottes de Brassempouy au sud de la France nous ont fait également retrouver.

Nous en arrivons ainsi à parler des traces de coutumes religieuses. L'une d'elles retrouvée aujourd'hui encore dans l'Aurès est celle relative au bucrâne qu'on a constatée déjà tant de fois sur des monuments archaïques égyptiens sans qu'on paraisse y avoir attaché grande importance, et qui me paraît même citée dans les textes des pyramides.

Les auteurs du livre nous parlent également de la déesse Neith qui serait d'origine libyenne, ce qu'ils ne veulent du reste pas admettre. Ils auraient pu nous dire qu'un des rois de la première dynastie découvert par Petrie à Abydos, porte le curieux nom de Meri-Neith, aimé de la déesse Neith.

Un passage du livre nous parle trop brièvement, à mon avis, des procédés de culture des berbères, sur lesquels M. Hamy vient de nous donner des détails fort intéressants parmi lesquels je tiens à en relever un spécialement : on trouve, dit le savant ethnographe, en Berbérie des pierres qui ressemblent à des socs. "Le Musée d'ethnographie possède "un spécimen de cet ustensile en pierre demi-poli, recueilli naguère par Largeau dans le "sud algérien." Or on a trouvé assez récemment à Hiéaconpolis des silex taillés d'une grandeur extraordinaire qui ne sont, eux aussi je pense, que des socs de charrue.

Ce ne sont là que quelques rapides notes de lecture sur lesquelles je me hasarde à attirer l'attention des savants autorisés, en recherchant pour terminer si l'hypothèse de préhistoriques libyens en Égypte s'accorde avec ce que l'histoire d'Égypte nous apprend.

Un des plus anciens documents écrits découverts par Petrie à Abydos, une tablette en ivoire commémorant une fête d'un roi de la première dynastie fait mention d'un chef de Libyens. D'autre part, les chroniqueurs nous montrent dans le premier roi d'Égypte, Ménès, un conquérant vainqueur des Libyens tandis qu'au début de la deuxième dynastie le sort de l'Égypte paraît en danger par une invasion de Libyens qui ne sont vaincus que grâce à la terreur que leur cause une éclipse.

Sous l'ancien empire, nombreuses sont les mentions de luttes contre les Libyens et il me semble que la scène de guerre trouvée par Petrie à Deshasheli représente la défaite d'un corps de Libyens par les Égyptiens. Faut-il rappeler le rôle joué pendant toute la durée de l'histoire de l'Égypte par les incursions de Libyens? N'y avait-il pas ainsi que nous le dit Mariette des Libyens établis encore à l'Occident du Delta jusqu'à l'époque moderne "établis à Rhacotis dès l'origine."

Ce qui paraît ressortir de l'ensemble est ou bien que les préhistoriques égyptiens étaient par la plupart des Libyens, ou bien, qu'au moment de l'entrée des égyptiens pharaoniques en Égypte les Libyens étaient sur le point eux aussi d'envahir l'Égypte qu'ils entouraient depuis l'Occident du Delta jusqu'en haute Nubie où encore sous la sixième dynastie on connaissait le champ des Libyens. Dans ce cas, les Pharaons pour assurer leur pouvoir sur les rives du Nil durent combattre les indigènes et repousser en même temps l'invasion libyenne. L'hypothèse est plus simple si les Libyens formaient le fonds de la population en Égypte.

Un point que les auteurs semblent avoir laissé de côté dans leurs comparaisons anthropologiques est que les Égyptiens préhistoriques libyens ou autres étaient fortement mêlés à la race nègre. Ils auraient pu nous dire ce que donne actuellement le mélange libyen et nègre.

Nous voici à la fin de nos remarques qui j'ose l'espérer ne seront pas trouvées inutiles : il me semble que l'hypothèse de l'origine libyenne s'accorde mieux avec les faits que l'hypothèse boiteuse de MM. MacIver et Wilkin faisant des concessions pour les retirer immédiatement (voir notamment, p. 108).

Cependant je craindrais d'avoir en quoi que ce soit amoindri la haute valeur des "Libyan Notes" qui malgré ce que les travaux ultérieurs pourront faire découvrir resteront toujours dans la matière un livre capital qui aura eu notamment le mérite de poser la question sur son véritable terrain.

JEAN CAPART.

P.S.—Je renvoie les lecteurs, pour le développement de tous les points qui précèdent, à l'admirable livre du professeur Sergi, *The Mediterranean Race: a Study of the Origin of European Peoples*, reçu pendant la correction des épreuves de mon article.

Greece : Prehistoric.

Myres.

Pre-Mykenæan Athens. By John L. Myres, M.A., F.S.A.

It is now some years since I noted on the south side of the Acropolis of Athens the traces of a very early settlement underlying the fragments of Mykenæan walls which lie in the open space behind the back wall of the Stoa of Eumenes, between the Odeion of Herodes Atticus on the west and the Asklepieion and the Dionysiac Theatre on the east. But it is only because I have failed hitherto to find any reference to these remains in any of the current books of reference that I venture to put on record what must have been visible to very many students of antiquity, and very likely has escaped record merely because it was patent.



VIEW. LOOKING WEST.

The whole of the area below the steep face of the Akropolis, and between the Odeion and the Asklepieion, was cleared of *débris* down to the rock at the same time as the rest of the south side of the hill ; but very few buildings or monuments were found either of Hellenic or Græco-Roman date. There occur, however, numerous fragments of house-walls of Mykenæan date, and these are fully recorded on the current ground plans of the site. What has not, however, been noted is, that these walls themselves stand upon a distinct layer of "made-earth," which must be of earlier date, and is, in fact, full of the *débris* of a very much more primitive settlement. This pre-Mykenæan stratum is in some places as much as a metre in depth ; but as its existence appears to have been ignored during the excavation, the only remains of it now are the narrow strips on which the Mykenæan walls stand, and these are already attenuated by the action of the weather.

Still, enough remains to give a general idea of the character of the settlement, which belongs, to all appearance, to the end of the Neolithic Age, or, perhaps, to the very beginning of the Bronze Age, and is comparable in many respects of its culture to the "Second Town" in the far finer series at Hissarlik. The made-earth already mentioned is full of fragments of rough, hand-made, unpainted pottery, made of the dark unlevigated mud of the Ilissos valley, full of fragments of the local schists ; not of the tawny and much less gritty clay of the Kerameikos and the Kephissos valley, on the other side of the site of Athens. There are also rare fragments of a light-coloured

ware, more like the clay of the Kerameikos, one of which showed traces of lustreless brown paint; but it was not quite clear to me in some cases whether these had not slipped down from the Mykenæan layer, where light-coloured and painted fragments of various fabrics abound. The pre-Mykenæan layer yields also fragments of ashes and cinders, and of animal bones, together with obsidian flakes, and occasional rubbed pebbles, which may have been potter's burnishers. That the pots were made near the site is also clear from their composition, and from the presence in one of them of a fragment of worked obsidian, which does not occur *in situ* in the Ilissos valley, or, indeed, in Attica at all. Similar very rude pottery is to be found on the surface on the east face of the Mouseion Hill, and on the unexcavated west slope of the Akropolis.

Vessels of "Hissarlik" types are already known from the excavations on the Akropolis itself; but it is a distinct point gained to know that in primitive, as in Mykenæan times, there was a regular settlement under cover of that natural fortress; more especially when it is remembered that the plot of ground in which both have been found is commonly identified with the "Pelasgikon" or "prehistoric site" which is mentioned by Thucydides (II., 17) as a tabu-plot of uncanny waste in the heart of fifth-century Athens. It is, perhaps, worth noting further that immediately above the best preserved bits of Mykenæan wall are the worst ravages of that "quarrying in the Pelasgikon," which had to be forbidden in the fifth century by the well-known Eleusinian Psephisma (Dittenberger, *Sylloge*, 13).

The photograph shows one of the best-preserved sections of the stratum in question. The letter A in the margin marks the surface of the hard red rock of the Akropolis; B, the upper surface of the pre-Mykenæan layer; C, the fragmentary Mykenæan wall, with bits of Mykenæan pottery in the crannies; D, the steep face of the Akropolis, with the fifth century fortress-wall above the Asklepieion, in the background.

J. L. MYRES.

Malta: Prehistoric.

Myres.

Prehistoric Pottery in the Valletta Museum in Malta. By John L. Myres, M.A., F.S.A.

71

The vases which stand prominently in the centre of the photograph overleaf are said to have come from rock-tombs in the Bengemma Hills in the north-west part of Malta. They are composed of a rough native clay of dark colour, the result of the disintegration of the soft limestone of the island; they are hand-made, and they bear the warm red hæmatitic surface with bright burnished lustre, which is common to so many early fabrics of pottery in the Mediterranean coast-lands.

The larger vessel, in the lower part of the photograph is comparatively simple in form. The body is nearly spherical, slightly flattened for stability below; the neck is wide, and slightly expanded above, but without distinct rim: the handles are set vertically rather low down on the body; and there is a small *mamilla* on the shoulder halfway between them. The general type is well-known among the early Bronze Age "red-ware" of Cyprus (*Cyprus Museum Catalogue*, Pl. II., 194, 200, 206), but the particular form of this vase is not Cypriote: neither does it occur among the pre-dynastic "red-ware" of Egypt (Petrie, *Nagada and Ballas*, passim), nor among the very scanty series from the Tunisian dolmens (*Bardo Museum*, unpublished), nor in the pottery of the Sicilian Bronze Age (*Syracuse Museum*: cf. Orsi, *Quattro Anni di Esplorazione Sicule*, passim).

The composite vase on the upper shelf in the photograph is remarkable first for its fine technique and for the perfection of its red surface, and then for its form. It consists of three high gourd-shaped vessels in contact with each other below, and connected also

above by a three-fold handle. Two of them are closed at the top by a conical roof, while the third is open and serves as a spout for the whole vessel. The modelling suggests at first sight both an Arab type and a well-known variety of the Kabyle pottery; but the fabric and the provenance of this specimen leave no doubt as to its early date. And it is worth noting that the three great groups of Mediterranean redware—in Cyprus, in Egypt, and in modern Kabylia—agree in an inclination both to the use of gourd forms and to the construction of composite and fantastic vases.



The tombs in the Bengemma Hills, from which these vessels and other fragments in the Valletta Museum are said to have come, are small rock-chambers hewn in the precipitous sides of a narrow ravine, which resemble very closely both the rock-tombs of south-eastern Sicily (Orsi, *l.c.* pp. 105, 117 = *Bull. di Paletn. Ital.*, XVII., pp. 59, 71) and those of Chaouach near Medjez-el-Bab in Tunis. Scattered over the narrow cultivated

terraces in front of the tomb-doors in the Bengemma ravine are many fragments, both of the coarser red-faced ware exemplified in the vessels described above, and also of a finer-grained, gypseous, smoky, drab-coloured ware, which takes a finer polish, and is occasionally ornamented with roughly-incised dots and lines. Both kinds of ware, it should be noted, are common also in and round the megalithic monument of Giganteia in the neighbouring island of Gozo, and present close parallels to the early burnished fabrics of the Sicilian rock-tombs. The tombs of the Bengemma Hills, which are described in Dr. Carnana's valuable work on the tombs of Malta, are mostly of later dates, and the record of the discovery of the vessels under review is sadly defective in detail. Enough, however, has, I think, been said to indicate the importance of this fragmentary evidence of an early stage of culture in Malta and the need of more careful investigation of the Bengemma site.

J. L. MYRES.

REVIEWS.

Africa, South.

Native Races Committee.

The Natives of South Africa; their Economic and Social Condition. Edited by the South African Native Races Committee. London, John Murray, 1901, **72** XV., 360 pp. 12s. net.

No more complete vindication of the course taken last summer by the Anthropological Institute and the Folklore Society, in presenting a joint memorial to H.M. Secretary of State for the Colonies, praying for a commission to enquire into the condition of the native races of the Transvaal and the Orange River Colony, could be wished for than this instructive book. It has been prepared by a committee representing all shades of political and religious opinion. It is written in a calm and matter-of-fact way, aiming at putting the readers in possession of accurate information, rather than at making any rhetorical appeal. Indeed, rhetoric and passion are markedly absent throughout, and every effort seems to have been made to arrive at accuracy.

Commencing with a general sketch of the native races, their laws, customs, and daily life, and an estimate of the native population of the various states composing what is now British South Africa, the Committee proceed to render an account of the existing administration of native affairs. This administration differs in different territories. Some of the territories are ours by right of conquest, others we hold as a protectorate by invitation of the chiefs and people. In the former case, reserves or locations are provided for the natives; in the latter, the entire territory belongs to them. The case of Basutoland is peculiar. Though a Crown Colony, the whole country is reserved for the natives, no white man being allowed to settle there, save officials, missionaries, and traders.

From this preliminary statement of facts necessary to the understanding of the following chapters, the Committee pass to an exposition of the important questions forming the main subject of the book. Land tenure, the labour question in its various phases, the pass laws, education, taxation, the franchise, and the liquor laws are successively reviewed. While much of the material here brought together is of interest rather to the statesman than to the anthropologist, the difficulties arising from the clash of cultures, and the modification and gradual defecation of native customs and beliefs under the influence of civilization are subjects of importance to the scientific student; and they here receive abundant illustration. The appendix, which ought by no means to be overlooked, contains a selection from the replies of correspondents to whom questions were addressed by the Committee. It may be regarded as a series of samples of the raw material from which much of the substance of the book has been woven.

Although the Committee have thus brought together a considerable mass of facts and opinions, they themselves recognise its deficiencies. In their final chapter they say: "This statement of conclusions and suggestions is made with diffidence, and with full consciousness of the incompleteness of much of the material available." And they appeal to the Government to institute in the Transvaal and Orange River Colony "a systematic investigation of the special needs of the natives now brought directly under Imperial control." In August last, at the very time when the joint memorial of the Anthropological Institute and the Folklore Society was presented, they addressed to the Colonial Secretary a representation pressing the desirability of a thorough investigation of native questions, and praying for an authoritative enquiry into the laws, customs, and land tenure, the tribal system, and other specified matters which are dealt with in these pages. As an expression of opinion on the part of men well qualified to judge, who have approached the subject from the practical side, it may be regarded as strong confirmation of the opinion expressed from the scientific side in the joint memorial. We may reasonably hope that when the proper time arrives, Mr. Chamberlain will favourably consider the representations, and that the terms of appointment of any Commission may be sufficiently wide to add to our knowledge of the natives in directions beyond those which may appear necessary for the immediate purposes of government. There is still much to be ascertained before even the best known tribes can be said to be thoroughly understood. With some of the tribes we are hardly acquainted at all. Among these may be noted, as of special interest, the pigmy Vaalpens, the remains of what are said to be "the true aborigines," who live in small and scattered communities in the northern parts of the Transvaal and the Bechuanaland Protectorate.

Three maps, giving the distribution and density of population in Cape Colony and Natal, are inserted; but no attempt is made to show the distribution of the native tribes.

E. S. HARTLAND.

Africa : Masai.

Hinde.

The Masai Language, Grammatical Notes, with a Vocabulary. Compiled by Hildegard Hinde, 1901. Cambridge University Press. 8vo., pp. ix., 75. Price 3s. 6d.

73

This pretty little volume is an addition to our knowledge of an African language brought up to date, and to be depended upon, as derived from original sources. In fact, the authoress dwelt two years in the region, and caught the words, as it were, from the lips of a barbarous tribe.

Anyone, who has the least acquaintance with East Africa, must have heard of Masai-land ; it is a small narrow region which extends from the southern boundary of Galla-land, north of the Equator, due south to a certain point south of the Equator, where it is surrounded by different portions of the region occupied by the great Bantu race, who spread over South Africa from the Equator to the Cape of Good Hope, and some of the tribes speak magnificent vernaculars.

The Masai tribe is quite distinct from the Bantu, and their language is classed by competent scholars in a small group called "Nuba-Fulah," a classification which may conveniently be retained for the present, though open to modification hereafter. One thing is clear, that the languages provisionally grouped in the Nuba-Fulah group have no connection with the Semitic, Hamitic, Negro, or Bantu languages, which surround them, though, possibly, loan-words may have crept into the mouths of barbarians from contact with their more highly-civilised neighbours.

The railway from the port of Mombasa on the eastern coast to U-Ganda on the great equatorial lake, passes through Masai-land, and this may prove a forerunner of permanent settlements, increased culture, and more abundant means of existence of this tribe ; and no doubt this meritorious little volume will prove the forerunner of a more solid grammar and dictionary, and some texts in print. No portion of the Bible has yet been translated and printed in the Masai language, but as there are missionaries in the neighbourhood this may be expected.

The language is briefly noticed at page 151 of Vol. I. of my *Modern Languages of Africa*, published by Messrs. Trübner & Co., Ludgate Hill, as far back as 1883 ; but even at that period a certain amount of literature existed, which I quote in the Appendix, Bibliography, of my volume, notably a vocabulary by Erhardt, which is noticed in the preface of the volume before us. A great deal more has to be done, and the sooner that it is done the better. The authoress of this Grammatical Note would greatly aid the future grammarian, whom we expect, if she could publish stories and conversations of a simple and genuine kind, taken down in the very words of each speaker.

The chapters of this book are : I. Grammatical Notes ; II. Verbs ; III. Phrases ; IV. Salutations ; V. Vocabulary.

R. N. CUST.

Africa : Soudan.

Chantre.

Les Bicharich et les Ababdeh. Par M. Ernest Chantre. Lyons, 1900.

M. Chantre is a diligent worker in some of the more obscure fields of anthropology. After exploring a great part of South-western Asia, he has now turned his attention to North-east Africa, and in this monograph gives us a succinct account of the Bishari and the Ababdehs, two of the more important members of the Beja Hamitic family. These had already been carefully studied by Munziger, Almgörst, Sergi, and several other observers, so that there was not very much new to be said about them. Some useful anthropometric tables, however, are given of various groups visited by the author, who agrees with his predecessors that these, like all the other Bejas, are from the ethnical standpoint mere varieties of the same primitive race which constitutes the so-called "Ethiopic" (Eastern) branch of the Hamitic division. Unfortunately, with

74

them are again included the Barabra or Nubians of the Nile Valley, who are not Hamites with a Negro strain, but Negroes with a Hamitic strain. This is clearly to be inferred from their speech, which, as shown by Lepsius (*Nubische Grammatik*), is not Hamitic, but closely related to the Negro language still current amongst the *Nubas* of Kordofan. The point requires to be all the more insisted upon, since in *Die Flexion des Egyptischen verbums* Professor Ermin has recently revived the old error of regarding the language of the Nile Nubians as an independent form of speech, like Basque, unrelated to any other known idiom, and suggesting that we have here the original tongue of the primitive Egyptians before they were Semitized by early intruders from Asia. The Egyptians were never "Semitized" in pre-Muhammedan times, and their ancient Hamitic language has not the remotest connection with that of the Nile Nubians, which is itself not isolated "like Basque," but a distinct branch of the Nuba tongue widely diffused amongst the tribes of pronounced Negro type, whose cradle is to be sought in the uplands of South Kordofan. For details see my *Ethnology of Egyptian Sudan*.

A. H. KEANE.

PROCEEDINGS OF SOCIETIES.

Proceedings.

Soc. d'Anthr. de Paris.

Sommaires des procès-verbaux des Séances de la Société d'Anthropologie de Paris. Janvier—Mai, 1900.

75

Séance du 3 janvier 1901.—Discours de M. Yves Guyot, Président sortant. Discours de M. le Docteur Chervin, Président entrant. M. Diamanti : Expériences de calcul mental et de mémoire visuelle. Discussion : MM. Laborde, Hervé, Atgier, Letourneau, Manouvrier, Azoulay, de Mortillet, Papillault et Volkov.

Séance du 17 janvier 1901.—M. Adrien de Mortillet présente des haches de bronze. M. Meyer présente un buste dit de la femme d'Anverniers, lac de Neuchâtel, modelé d'après un crâne de l'époque néolithique, sur les indications de M. le Professeur Dr. Kollmanus de Bâle, par le Sculpteur Buchli. Discussion : MM. Manouvrier, Hervé, Papillault, de Mortillet, Regnault, Zaborowski, Garnaud, Block. M. le Dr. Danjou envoie des crânes de Madagascar. M. Macquart lit un mémoire sur la diminution du taux de la natalité française. Discussion : MM. Zaborowski, Regnault, Hervé, Dumont, Yves Guyot, de Mortillet. M. le Dr. Garnaud fait une communication sur le livre de Strack : "Le Sang et le Crime Zitel." M. Mathews communique un mémoire sur des fouilles Australiennes.

Séance du 7 février 1901.—Compte-rendu de la visite de la Société au Musée Guimet. M. le Dr. Atgier présente deux sujets : l'un acrocéphale, l'autre scaphocéphale. Discussion : MM. Manouvrier, Papillault, Hervé. M. Adrien de Mortillet montre des photographies de Sakalaves. M. le Dr. Godin lit un mémoire sur l'influence de la gymnastique sur la croissance des différentes parties du corps : Discussion. M. le Dr. Garnaud lit un mémoire sur les origines et le sens de la circoncision : Discussion.

Séance du 21 février 1901.—M. Sanson présente des photographies de bœufs géants. M. Beauvais adresse d'intéressantes photographies du sud de la Chine. M. le Dr. Atgier présente un sujet scaphocéphale. M. le Dr. Regnault lit un mémoire sur la transformation de l'indice céphalique. Discussion : MM. Zaborowski, Anthony, Atgier, Block. M. Thieullen commence la lecture d'un mémoire sur les pierres figurés.

Séance du 7 mars 1901.—M. le Dr. Regnault présente un crâne hydrocéphale. M. Vauvillé fait don de vases étrusques, gaulois et mérovingiens. M. Thieullen termine la lecture de son mémoire sur les pierres figurés. M. le Dr. Azoulay commence la lecture d'un mémoire sur le mode de constitution d'un musée phonographique.

M. Vasehide lit un mémoire sur le rêve prophétique. Mlle. Pelletier communique une note sur l'indice cubique crânien.

Séance du 14 mars 1901.—Le Président annonce la présence de M. le Baron Andrian, de Vienne, et de M. Brabrook, de Londres. MM. les Drs. Hickmet et Regnault communiquent une note sur le recrutement des eunuques du harem de Constantinople. Discussion : M. le Baron Andrian, Zaborowski, Atgier. M. le Dr. Adolphe Block lit un mémoire sur la transformation d'une race de couleur foncée en une race blanche. Discussion : MM. Deniker, Zaborowski, Atgier, Regnault, Verneau, Manouvrier, Hervé. M. Laville communique le résultat de ses fouilles dans des dépôts néolithiques et infra-néolithiques stratifiés de la vallée de la Seine. Discussion : MM. Fourdrignier, A. de Mortillet, Vauvillé, Marty.

Séance du 4 avril 1901.—M. le Dr. Doré fait don au musée de crânes provenant du Cimetière de Saint-Germain des Prés. M. Giroux présente des photographies de Menhirs et de Dolmens des environs de Paris : Dolmens de la Pierre Turquoise, de Trye château, de Boury, de la Justice et du Trou aux Anglais à Aubergenville, etc. M. le Dr. Azoulay achève la lecture de son mémoire sur la constitution d'un musée phonographique. Discussion : MM. Fourdrignier, Letourneau, Azoulay. M. le Dr. Verneau donne lecture du Rapport de la Commission chargée d'étudier les moyens de développer des rapports scientifiques et amicaux avec les sociétés anthropologiques de la France et de l'étranger. Ce rapport est approuvé. M. Deniker fait une communication sur les taches pigmentaires de la région sacro-lombaire.

Séance du 18 avril 1901.—M. Adrien de Mortillet offre des dessins et photographies provenant de l'exposition d'anthropologie de 1900. M. Duhoussier rappelle ses communications de 1877 sur la circoncision des filles en Egypte. M. Lejeune répond à la communication de M. Vasehide sur les rêves prophétiques. M. Laville : Coupe de la carrière de Saint-Prest (Eure-et-Loir), silex taillés. Discussion : MM. Sanson, d'Ault du Mesnil, Verneau. M. le Dr. Adolphe Block : L'homme préhistorique d'après Buffon. M. Vasehide : Contribution à l'étude de la signification des rêves. Discussion : MM. Azoulay, Papillault, Manouvrier, d'Échérac, Sanson, Fourdrignier, Vasehide. M. le Professeur Gustave Retzius fait connaître les résultats de l'enquête anthropométrique faite en Suède sur 45,000 conscrits. Discussion : MM. Verneau, Manouvrier.

Séance du 2 mai 1901.—M. A. de Mortillet offre des photographies de nains. À l'occasion de la communication de M. Deniker, il signale un cas de développement pileux dans la région sacrée chez un sujet féminin. M. Fourdrignier présente de petits silex trouvés avec MM. Nicaise et Morel, en 1876, à St. Martin-sur-Pré (Marne). M. le Président annonce : 1° qu'une Excursion à Châlons-sur-Marne, pour assister à des fouilles de tombes gauloises trouvées par M. Emile Schmit, sera faite dimanche prochain 5 courant ; 2° que la Conférence transformiste annuelle sera faite par M. Vinson, le 18 mai sur la littérature et l'écriture dans l'Inde méridionale. M. Zaborowski : Influences égyptiennes au Sénégal et au Soudan. Discussion : MM. Verneau, Delisle, Garnault, A. de Mortillet, Hervé, Fourdrignier, Zaborowski. M. Azoulay : Le musée phonographique de la Société d'Anthropologie. Discussion : MM. Letourneau, Vinson. M. Garnault : Les prétendus ex-Voto médicaux de l'Egypte. Discussion : MM. Atgier, Regnault, Garnault.

Séance du 16 mai 1901.—Les Sociétés d'Anthropologie de Vienne et de Rome acceptent de faire l'échange des sommaires des procès-verbaux et le principe d'un annuaire international des anthropologistes. La séance solennelle de la société aura lieu le 18 juillet. M. de Mortillet rend compte de différentes excursions scientifiques faites depuis la dernière séance. M. Dubalen fait don d'instruments en pierre provenant du département des landes. MM. Faivre et Cauderlier envoient des travaux pour les prix Godard et Bertillon. Une commission composée de MM. de Mortillet, Otgier et

Tapié de Céleyran est chargée de rédiger des instructions à l'usage des fouilleurs. M. le Dr. Regnault offre la photographie d'une femme de 53 ans ayant 2 nez et trois yeux. Discussion : MM. Hervé, Mathias Duval, Anthony et Regnault. M. Laville : Quaternaire moyen dans le gypse de Montmagny (S. & O.).

Proceedings.

Anthropological Institute.

Ordinary Meeting, Jan. 22, 1901. Mr. C. H. Read, F.S.A., President, in the chair. The President announced from the chair the death of Her Majesty Queen Victoria, and declared the meeting adjourned.

76

Annual Meeting, Jan. 30, 1901. Mr. C. H. Read, F.S.A., President, in the chair. The Reports of the Treasurer and Council were read and adopted. The Officers and Council were duly elected for the year 1901-2.

The President delivered his annual address, which will be found printed in full in the *Journal* of the Institute, Vol. XXXI., p. 1 ff., together with the Reports of the Treasurer and Council, and the official minutes of the meeting.

Ordinary Meeting, Feb. 12, 1901. Dr. A. C. Haddon, F.R.S., President, in the chair.

The election was announced of Mr. Thomas Durnan, as a Fellow of the Institute.

Mr. A. L. Lewis, Treasurer of the Institute, exhibited a number of photographs of Stonehenge, illustrating the recent fall of stones (cf. *Man*, 1901, 18); and also a photograph of the well-known Tonga trilithon. Mr. Stopes pointed out the ease with which restorations of Stonehenge might be effected, and urged that representations should be made in the proper quarter. The President expressed the thanks of the meeting to Mr. Lewis for his exhibit.

The Secretary reported recent accessions to the library of the Institute, and also the presentation by Dr. Eddowes of a series of slides illustrating a number of details of the construction of Stonehenge. Thanks were ordered to be returned to Dr. Eddowes and to the publishers and others who had presented books and pamphlets.

Mr. W. Rosenhain read a paper on "Malay Metal Work," which was illustrated by lantern slides and experiments. The paper was discussed by the President, Mr. Gowland, and Mr. Atkinson. The thanks of the Institute were ordered to be returned to Mr. Rosenhain for his paper, which will be printed in full in the *Journal* of the Institute, Vol. XXXI.

Extraordinary Meeting, Feb. 25, 1901. Prof. A. C. Haddon, F.R.S., President, in the chair.

Major-General Robley presented to the Institute a drawing of a Maori war-dance sketched at Le Papa, Tauranga, on December 25th, 1864. The thanks of the Institute were ordered to be returned to Major-General Robley for his gift, which is exhibited in the library of the Institute.

Mr. H. Ling Roth read a paper on "Maori Tatu and Moko," which was illustrated by lantern slides and drawings. The paper was discussed by Mr. Edge-Partington, Mr. C. H. Read and the President. The thanks of the Institute were returned to Mr. Ling Roth for his paper, which will be printed, with full illustration, in the *Journal* of the Institute, Vol. XXXI.

Ordinary Meeting, March 12, 1901. Dr. A. C. Haddon, F.R.S., President, in the chair.

Professor H. Louis exhibited and described examples of the "Kingfisher type of Kris from the Malay Peninsula." The exhibit was discussed by Mr. Gowland and

the President, and the thanks of the Institute were ordered to be returned to Professor Louis for his exhibit, which will be found described and illustrated in the *Journal* of the Institute, Vol. XXX., Miscellanea, No. 77, Plate I—J.

Professor Victor Horsley, F.R.S., presented a communication from Rev. J. A. Crump, on "Trephining in the South Seas," and commented at length on the new material which it contained. Three trephined skulls were exhibited, in illustration of the paper, by Mr. Oldfield Thomas, of the British Museum, to whom the Institute is indebted for the opportunity of discussing Mr. Crump's results. The paper was discussed by Professor Thane, Mr. Shrubbsall, Dr. Garson, and the President, and will be printed in full in the *Journal* of the Institute, Vol. XXXI.

Mr. J. Gray, B.Sc., described and exhibited cephalometric instruments devised by himself and cephalograms obtained by their means. The paper was discussed by Professor Thane, Dr. Garson, and the President, and will be printed in full in the *Journal* of the Institute, Vol. XXXI.

The thanks of the Institute were ordered to be returned to the authors and communicators of papers.

Ordinary Meeting, April 23, 1901. Dr. A. C. Haddon, F.R.S., President, in the chair.

The President briefly commemorated the devoted services of the late Rev. James Chalmers, whose murder by head-hunting raiders was that day reported from New Guinea.

The election was announced of Dr. A. J. Chalmers, Mrs. Lala Fisher, Messrs. E. A. Preen, J. A. Travers, H. A. Rose, H. R. H. Hall, and C. Letts, as Fellows of the Institute.

Mr. L. J. Shirley exhibited specimens of Neolithic implements from a site on the Wiltshire border of Berkshire. The exhibit was discussed by the President and the Secretary.

Mr. Franklin White exhibited a number of stone implements from Rhodesia and photographs and plans of ruins in that country. The paper was discussed by the Secretary and the President, and will be printed with full illustration in the *Journal* of the Institute, Vol. XXXI.

Communications were received from Rev. J. Roscoe, through Dr. J. G. Frazer, on "The Manners and Customs of the Baganda"; and from Mr. S. H. Ray on "Folktales from the New Hebrides." These will be printed in full in the *Journal* of the Institute, Vol. XXXI.

The thanks of the Institute were ordered to be returned to the authors and communicators of papers.

Ordinary Meeting, May 14, 1901. Dr. A. C. Haddon, F.R.S., President, in the chair.

The election was announced of Dr. Bushell, C.M.G., Dr. Edridge Green, Dr. Mitchell, Mrs. Ballen, Mrs. Farquharson, Mr. Franklin White, Rev. H. V. Mills.

Mr. R. Shelford exhibited a number of carved bamboos from Sarawak, and commented upon the elements of Dyak decorative art.

Mr. MacDougall read a paper, by Mr. C. Hose and himself, on "The Relations between Men and Animals in Sarawak." The paper was discussed by the President, Major Travers, Messrs. Biddulph Martin, Shelford, Gomme, and N. W. Thomas.

The thanks of the Institute were ordered to be returned to the authors of these communications, which will be printed in full in the *Journal* of the Institute, Vol. XXXI.

汝當求出離於佛教勤修
降伏生死軍如象摧草舍

鬼大常無

於此法律中常修不投逆
能竭煩惱海當盡苦邊際



Hiroshige, Watercolor & Ink on Paper.

BUDDHIST WHEEL OF LIFE FROM JAPAN.





BOWL, VASE, AND MIRROR, FROM A MEDIAEVAL CHINESE TOMB.
BRITISH MUSEUM.



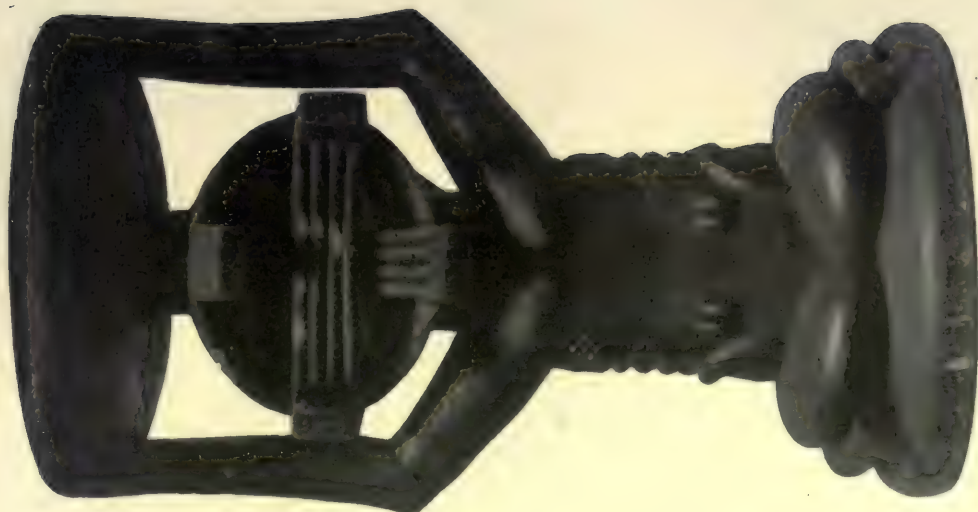


AUSTRALIAN OBJECTS IN THE PITT RIVERS MUSEUM, OXFORD.

1. SWAN-NECKED BOOMERANG OF UNUSUAL FORM, FROM MACARTHUR RIVER, GULF OF CARPENTARIA.
2. SWAN-NECKED BOOMERANG OF ORDINARY TYPE.
- 3-5. BAMBU TRUMPETS FROM THE NORTHERN TERRITORY OF SOUTH AUSTRALIA.



(Back.)



(Side-view.)



(Front.)



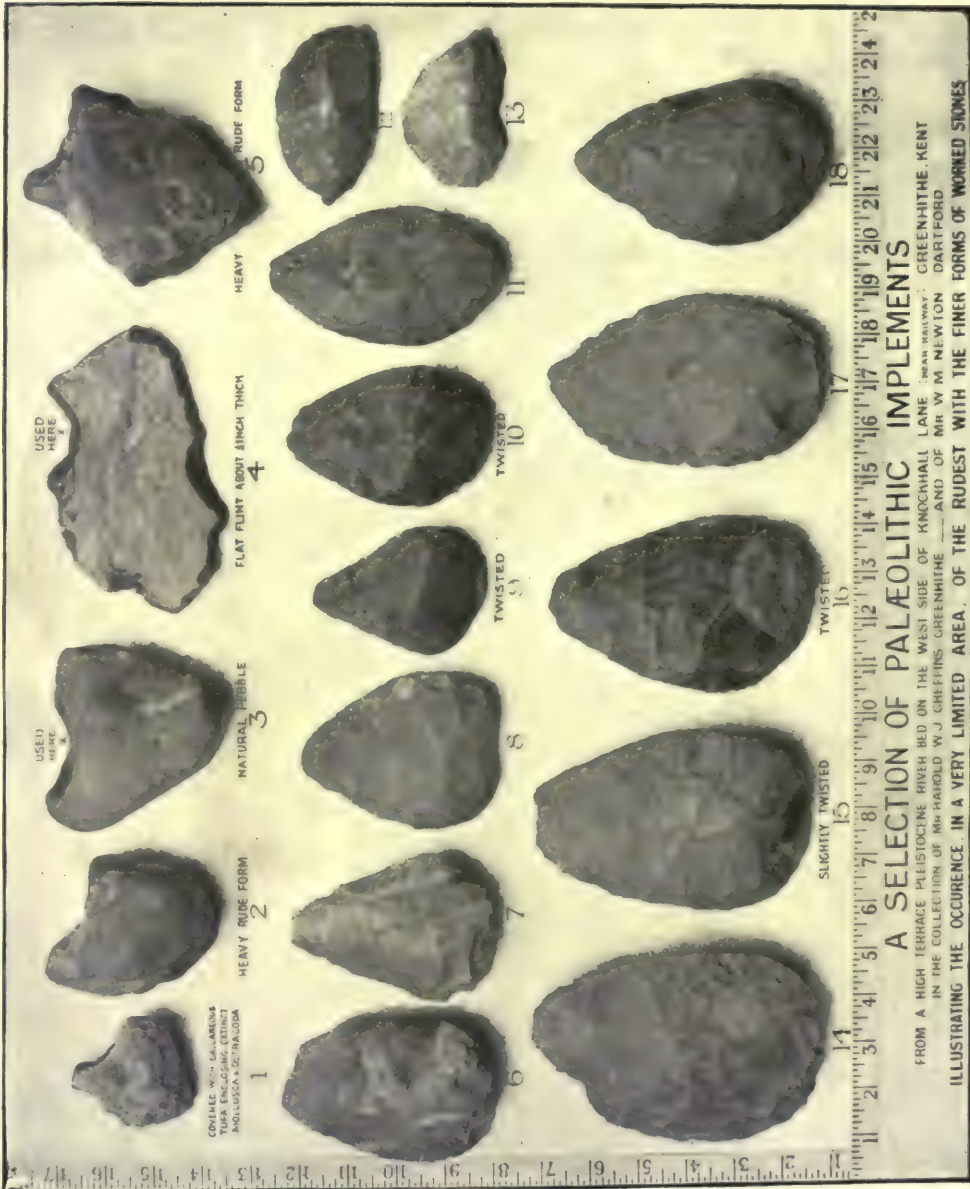
CARVED WOODEN STOOL FROM BRITISH EAST AFRICA.
BRITISH MUSEUM.





MEMORIAL HEADS IN THE PITT RIVERS MUSEUM (NORMAN HARDY COLLECTION).
1. BIRIANGI ISLANDS. 2. BIRIANGI ISLANDS. 3. BIRIANGI ISLANDS. 4. BIRIANGI ISLANDS. 5. BIRIANGI ISLANDS.





PALÆOLITHIC IMPLEMENTS FROM A HIGH TERRACE PLEISTOCENE RIVER-BED
NEAR GREENHITHE.

A SELECTION OF PALÆOLITHIC IMPLEMENTS

FROM A HIGH TERRACE PLEISTOCENE RIVER BED ON THE WEST SIDE OF KNOCKHALL LANE (NEAR RAILWAY) GREENHITHE, KENT
IN THE COLLECTION OF MR HAROLD W J GREENHITS GREENHITHE — AND OF MR W M NEWTON DARTFORD

ILLUSTRATING THE OCCURRENCE IN A VERY LIMITED AREA OF THE RUDEST WITH THE FINER FORMS OF WORKED STONES





SPEAR-HEAD AND SOCKETED CELT OF BRONZE
FROM THE
SHAN STATES, BURMA.
NOW IN THE PITT RIVERS MUSEUM, OXFORD.

ORIGINAL ARTICLES.

With Plate G.

Burma : Shan States.


Balfour.

A Spear-head and Socketed Celt of Bronze from the Shan States, Burma.

Communicated by Henry Balfour, M.A., Curator of the Pitt Rivers Museum, Oxford.

77

Implements of forms referable to a Bronze Age in South-eastern Asia are of sufficient rarity to justify the publication of the two examples shown in Plate G. These came to me through the kindness of Mr. H. Leveson, C.S., who obtained them from natives on the spot. The bronze spear-head was procured by him in 1896 from a native who stated that it had been found by his father some thirty years previously in the bed of the Nam Lwi stream, a tributary of the Mekong River, *lat.* 21° 20' N., *long.* 100° E. As the native informed Mr. Leveson, it was believed to have descended with the lightning, and that it pierced deep into the ground, and "in the fulness of its time ascended to the view of man." It is interesting to find that this belief in a celestial origin, which is so commonly and universally associated with implements of a forgotten Stone Age, should be also held in regard to those of the Bronze Age, and it goes to prove a considerable antiquity to these bronze weapons, which have become surrounded with myth because their real nature and human origin has long passed out of memory. Its length is $6\frac{3}{8}$ inches, and its width $1\frac{1}{8}$ inches or a trifle more. As will be seen, it is leaf-shaped and socketed, the socket being produced in the casting and not hammered round. A portion of the socket has been broken away, so that the present length is less than its original length. The surface is pitted considerably with small gas-vents formed in the casting. This spear-head is practically identical in form with many of the leaf-shaped socketed bronze spear-heads of Western Europe.

The bronze celt was discovered in digging in the gravel bed of a stream called the Nam Pang, a tributary of the Nam Hka stream, which runs into the Salween River on the left bank, *lat.* 22° 10' N., *long.* 99° 10' E. Gold-washing operations are carried on in the Nam Pang bed, and it was thus that this bronze celt was found, together with a polished stone axe-head. It is a well-cast implement, and, although it resembles in form some of the socketed bronze celts of Western Europe, it presents at the same time minor peculiarities which give to it a local colouring. It is $3\frac{1}{8}$ inches long, $2\frac{1}{2}$ inches wide, and weighs 3 ozs. 306 grs. The metal is somewhat thin, the cutting edge expanded and crescentic. In transverse section the shape is fusiform, the two faces being convex and meeting to form edges at the sides. When viewed from one of the sides it is seen to be unsymmetrical, one face being considerably less convex than the other towards the cutting edge, in fact it is nearly flat at this part. This shape has the appearance of being intentional, and the implement may have been designed for some special kind of work. On the obverse are three raised zig-zag lines running parallel to each other from the socket rim to a transverse line which forks at the sides of the celt. The reverse is marked with a raised line following the contour of this shape :—  There is a fine green patina over the surfaces.

Both spear-head and celt are now in the Pitt Rivers Museum, Oxford.

Dr. J. Anderson procured a socketed bronze celt in the Sanda Valley, Yunnan (c. 98° E., 24° 40' N.), of a peculiarly specialized form, with oblique edge and winged sides. He mentions the rarity of these implements, and says that he paid 2*l.* 10*s.* for his specimen, while for three others exactly similar he was asked 5*l.* each ("Rep. on Exped. to W. Yunnan," 1871, p. 414, pl. V.). There are many copper and tin mines in Yunnan, and these materials were brought in quantities thence to Mandalay and Momié by Chinese caravans.

Sir J. Evans mentions also an example of socketed celt from Yunan in the British Museum, and one from Cambodia, also a specimen from Java which is in the Cabinet of Coins, Stuttgart. They appear to be very rare.

HENRY BALFOUR.

Nomenclature: Glaze or Varnish.

Myres.

Note on the Use of the Words "Glaze" and "Varnish" in the Description of Painted Pottery. Communicated by John L. Myres.

78

Frequent confusion appears to have arisen among students of ancient ceramics, and particularly of the early pot-fabrics of the Mediterranean, from the use of the term "*varnish*" or "*varnish-pigment*" to describe such painted ornament as exhibits a lustrous surface after firing.

For this kind of pigment, the proper term in English is not "*varnish*" but "*glaze*," and the use of the word "*varnish*" is due to an ill advised attempt to translate literally the German "*Firnis-maleri*." This German term was, I believe, first used by Drs. Furtwängler and Loeschke, in their *Mykenische Vasen*, published in 1886, to denote the third and most highly finished group of their classification of Mykenæan pottery; in contra-distinction to the second and more primitive group, to which, because its colours are powdery and lustreless, they gave the name of *Matt-maleri*.

Now *Firnis* in German appears to be rightly used, both (1) for those pigments which, as in the case of the Mykenæan pottery, contain enough fusible matter to vitrify in the firing and so to acquire a permanent glassy lustre; and also (2) for those which, like ordinary housepainters' colours, or the characteristic "Kabyle pottery" of Algeria, are made up with gummy or resinous matter, which, while it soon dries hard and gives a lustrous appearance to the surface of the vessel, is easily scratched or washed off with turpentine or other solvent of the lustrous gum; and, if exposed to even a dull red heat, burns away altogether, leaving the pigment charred, powdery, and easy to rub off.

In French, also, the corresponding word *vernis* seems to be properly applied either to a fusible or to a resinous surface covering.

In English, on the other hand, the word "*varnish*" has become restricted in common use so as to denote the gummy or resinous pigments only; while for vitrified pigments English potters regularly use the word "*glaze*" or "*glazed-pigment*," which has the advantage of suggesting at once the idea of something *glass-like* or vitreous, and is not likely, in descriptions of pottery at all events, to cause confusion with the various lustrous substitutes, such as starch or albumen, to which this term is sometimes popularly applied. It will, therefore, save much confusion and inconvenience if those who have occasion to describe pot-fabrics with lustrous ornaments will confine their use of the word "*varnish*" to gummy and resinous pigments only; and of the word "*glaze*" to vitreous pigments; reserving the word "*lustrous*" as a generic term (as in mineralogy) for all pigments the surface of which throw back the light at all, but of which the specifically vitreous or resinous character is not clearly apparent, and the words "*burnished*" or "*polished*" for those on the surface, or parts of the surface, of which a lustre has subsequently been brought out by mechanical friction. The only objection, so far as I am aware, to this generic use of the term "*lustre*" is that "*lustre-ware*" has become a common phrase for certain mediæval glazed wares which exhibit what in mineralogy would be termed a "*metallic lustre*." But I do not think that in practice there would be any difficulty on this score.

Three other useful terms may, perhaps, be suggested, in conclusion, to describe kindred processes of decoration, which do not fall under any of the foregoing, but are, I find, frequently liable to confusion with them.

1. The term "*slip*" is usually employed in its correct technical sense (corresponding exactly with the French *enduit* and the German *Ueberzug*) of a coating of finely levigated clay applied to the whole surface of the vessel by dipping it in a bath of clay-

and-water of the consistency of cream. But it is also sometimes incorrectly used to denote a coloured layer applied with a brush to large areas of the surface, so as to leave the ground-colour of the vase only showing in detached panels. In this case the coloured layer is not a *slip* but a *paint* or *glaze*, and should be described accordingly. It should be remembered, also, that many clays, if left to stand, or, better, if rotated for a few moments on the wheel after being thrown into the desired form, are liable to exude sufficient creamy moisture to produce automatically a very thin deposit of fine clay all over the surface, which, if it is of appreciable thickness, is most difficult to distinguish from a true slip. In describing Cypriote vases, among which this phenomenon is very frequent, I have usually specified as having a “*distinct slip*” those vases in which the slip is of different composition or origin from the clay of the vessel itself, or in which it showed definite signs of having been applied by dipping.

2. Sometimes, however, a dilute clay, such as might be used for a slip (usually highly coloured), is applied to the surface of a vessel by means of a rag or a wisp of grass so as to cover the whole or nearly the whole area, after the manner of a slip, but so thinly or unevenly as to leave pale patches or even actual *lacunæ*, together with other signs, such as brush-marks, or longitudinal streaks, of the mode in which the coloured coating was applied. This kind of decoration is often called a “*slip*” like the preceding; but it results from a wholly different process and produces a different result, intermediate between a true “*slip*” and a mere “*painted*” ornament; and I have been accustomed myself to distinguish it by the descriptive name of a “*smear*.” I know no French or German phrase which corresponds, and the vases which exhibit a “*smear*” are usually described merely as having a *schlecht angebrachter Ueberzug*, or some similar phrase.

3. Yet another way of modifying, and making uniform, the colour of pottery, very commonly practised by primitive peoples, is by treating the pot, after firing, with a vegetable decoction which sinks into the porous clay, and is there carbonised in its very substance, either because the decoction is applied while the pot is still quite hot from the furnace, or by a subsequent firing. The uniform black sooty surface thus produced is then usually burnished, either uniformly or in patterns, with a smooth pebble or (as in early Cyprus) with a horse-tooth. Examples of this carbonised pottery are, (1) the black ware of the lowest layer at Hissarlik (Schliemann, *Ilios*, pages 218-220, where the mode of manufacture is only inferred, and (2) the black ware made in Torres Straits, and collected by the recent Cambridge Expedition; in the latter case Dr. Haddon tells me that he witnessed the whole process of manufacture. This mode of decoration, and all similar modes in which a pigment is caused to soak into the texture of the clay, I would propose to call a *stain*, differentiating *iron-stain*, *smoke-stain*, *carbonised-stain*, and the like as occasion may require. Such *stains*, it should be noted, can only be distinguished with certainty from a *slip* or a *smear* on a cross fracture; in which aspect a *smear* is too shallow to be recognisable at all; a true *slip* shows a more or less distinct layer on the surface of the coarser clay of the vessel; an automatic *slip* produced by surface deposition begins with a fine texture at the surface and becomes gradually coarser till it merges in the clay of the interior, while a *stain* has no surface “layer,” and shows only a gradual change of tint, strongest at the surface, and evanescent towards the interior.

J. L. MYRES.

Norway: Folklore.

Skeat.

A Modern Trace of Sun-worship in Norway. Communicated by W. W. Skeat, M.A.

79

Dr. Sten Konow, of Christiania, the Sanskrit scholar, who is now employed under Dr. Grierson in connection with the work of the Linguistic Survey of India, recently related a curious fact which seems to point to the former existence of some form of

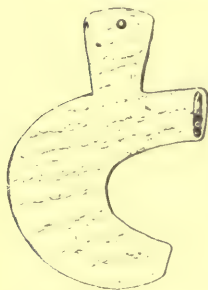
nimistic "Sun-worship" in Norway. "As a child I lived" (he says) "in the parish of Vang, in Valdres, Norway. The parish is situated in a valley surrounded by mountains so high that the sun disappears for several weeks in the winter. The first day when it is seen again (I was told) old people used to fill a spoon with butter and place it in the window, in order that the sun might 'eat' it." Can any of your readers throw further light on this interesting Norwegian practice? W. W. SKEAT.

Pacific.

Edge-Partington.

An Object of Unknown Use and Locality. By J. Edge-Partington.

The subject of this note was obtained several years ago on the island of **80**



Rotumah by Mr. W. L. Allardyce. He could obtain no information as to its use. It is made from a flat piece of highly-polished wood of a beautiful grain and of a deep brown-red colour. The outer edge is sharp as if for marking or cutting, while the inner edge is squared; the narrow end has a groove on both sides into which native white shell beads have been fixed by black cement, of these beads only one now remains; from the upper edge there is an oblong projection with a perforation as if for suspension. My object in sending in a drawing of this object is, in the first place, to try and find out its true locality, for I doubt it being of Rotuman origin; and,

secondly, its use. Perhaps some of our many readers will be able to furnish me with some information. J. E.-P.

Pacific: Solomon Islands.

Woodford: Edge-Partington.

Native Ornaments from the Solomon Islands, recently presented to the British Museum by Mr. C. M. Woodford. Contributed by J. Edge-Partington. **81**

Since Mr. Woodford was appointed British Commissioner of the Solomon Islands he has been a regular contributor to our national collections. From his last gift I have selected the following as being of particular interest:—

No. 1 is an armlet from the island of New Georgia; it is made from a small *Pridaena* shell of a dirty brown colour, probably so from age, the native name of which

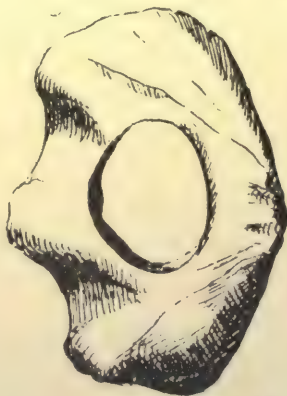
STONE ARMLET FOUND
IN AN OLD VILLAGE ON
GIZO ISLAND 100ft
ABOVE SEA LEVEL



NO 1

SHELL MONEY [BAREKE]
NEW GEORGIA
12

NO 2

DIAM.
4 3/4
W 1 1/4

1 6 7/8



is "Bareke," this represents so much money, and is worth three or four *bakhas*. Unfortunately Mr. Woodford does not say what particular form a *bakha* takes.

No. 2 is a fragment of a native armlet of volcanic stone, discovered by Mr. Woodford on the site of an old village in the island of Gizo, while clearing the ground for a Government station. It was found at the height of 100 feet above the sea, but shows signs of having been at some time under water, as it is encrusted with what is apparently a growth of coral. An old native to whom he showed it said that it was a kind of armlet that used formerly to be made upon the island of Kulambangara, near to Gizo.

The above descriptions are from notes supplied by Mr. Woodford with the specimens.
J. EDGE-PARTINGTON.

Africa : Rhodesia.

White.

On the Khami Ruins, Rhodesia. By Franklin White. Abstract of a paper **82**
read before the Rhodesia Scientific Association.

The Khami ruins are situated about twelve miles west of Bulawayo, and close to the river of the same name. Their builders took advantage of the knolls of granite which are characteristic of the neighbourhood, and the artificial defences are adapted in all cases to strengthen the natural fortresses which they provide. The walls are built of fairly regular blocks of granite, varying from seven to eleven inches in length, and three to five inches in thickness, set for the most part end-on into the wall; the centre of the wall behind them being filled up more or less loosely with fragments. The walls are laid dry without cement, and when carried to any considerable height, they are stepped back at every six or eight feet. The blocks usually break joint well, but departures from this rule are common. The builders were somewhat indifferent to the straightness of their lines, and allowed their walls to turn aside to avoid boulders, or take advantage of them. Cross walls are built butting against the side walls, not built into them. For greater strength the walls are built thicker in the neighbourhood of doorways, which in the main walls are, apparently, very few in number.

The space within the enclosures is usually filled in to the level of the top of the walls; but it is possible that this filling is due to more recent occupants. This idea is supported by the existence to the north of the main ruin of a wall, which must have been five or six feet high, with a gate or doorway in it.

The ornamentation of the walls is confined to the "herring bone" and chequer pattern, and to the introduction of courses of a darker coloured rock; as at Zimbabwe and similar sites, the ornaments are introduced without system, and begin and end off abruptly. The ornamented walls face any point of the compass, but generally towards the west, the eastern walls being, as a rule, of insignificant size, as they are nearly all at the top of the precipitous river bank.

There are four principal ruins, of which, however, one only has been at all fully examined by Mr. White and his party, besides other fortified knolls further to the northward.

The heaps of *débris* round the ruins show abundant signs of human occupation—pottery (showing some twenty-four different patterns, painted in red and black), bones, brass wire work, gold beads, fragments of crucibles, implements for drawing wire, and even stone and iron implements, occurring in layers of ashes several feet in thickness. In one place the wall of the central platform itself appears to rest on a layer of ashes, with bones and broken pottery of earlier date. Chips of flint, quartzite, and chalcedony are abundant; and stone arrow heads and scrapers, as well as other worked stones, are occasionally found.

Another interesting feature is the presence of fairly numerous circles or walls of burnt clay, fifteen to forty feet in diameter, generally raised on a platform, also of burnt clay, coating a ring or layer of laid stones. In one instance the clay walls are still

standing to a height of five feet. They seem to indicate huts; and traces of posts in the thickness of the wall seem to show how the weight of the roof was supported.

Near one of the ruins are the remains of two elaborate buildings, with circular central chambers surrounded by radial cells, with doorways and semi-circular thresholds of burnt clay. Mr. White is informed that in some districts the natives still make their dwellings in a very similar style.

Mr. White concludes by distinguishing three stages of culture: (1) a primitive stone age, prior to the building of the ruins; (2) the civilisation of the ruin builders, whom he identifies with the representatives of the gold industry; (3) that of the builders of the clay dwellings within the ruins, who are certainly subsequent, and, like the modern Kaffirs, do not appear to have been acquainted with gold working.

Mr. White and his companions are greatly to be congratulated on the result of their exploration of these interesting ruins, which throw much new light on the early history of this part of South Africa; on the ruins of Zimbabwe, formerly described by Mr. Theodore Bent and Mr. Swan; and on the very similar ruins of Dhlo-Dhlo, which Mr. White himself has explored, and has described in full at a recent meeting of the Anthropological Institute [*Man*, 1901, 76]. It is much to be hoped that the intelligent interest in these monuments which is being so wisely fostered by the Scientific Association of Rhodesia may prevail to secure their preservation, and the systematic examination of the valuable objects which they not infrequently contain. J.

Africa: Tripoli.

Myres.

Collateral Survival of Successive Styles of Art in North Africa. By John L. Myres, M.A., F.S.A.

83

The photograph appended to this note represents a part of the weekly market which is held outside the little town of Khoms, or Lebda, in Tripoli, the modern representative of the great trading city of Leptis Magna. Behind is the whitewashed wall of the Turkish fort, with part of the Government buildings; in front is a group of local "Arabs" from the villages round, with stacks of pottery for sale.

The pots, which were exposed for sale in April 1896, when this photograph was taken, illustrated in a remarkable way the extent to which successive cultures may overflow an area without extinguishing, and almost without contaminating, the industries and the art of the peasantry. Three fabrics of pottery are shown in the photograph.

1. The long-necked bottles, in front of the draped figures to the right of the view, with a heavy collar-like rim, are of forms which are characteristic of Arab pottery throughout the whole of North Africa, and which have persisted unchanged since early mediæval times, if not from the date of the Arab conquest itself.

2. The large ovoid water-jars in the foreground and to the left, and the smaller wide-mouthed jars, one-handled jugs, and open saucers, which are accumulated immediately behind them, reproduce a varied but characteristic series of the late Græco-Roman types which immediately preceded the Arab conquest. They coexist with the Arab types, but show no trace of contamination of style. I was not able to discover for certain whether they are made by the same potters, or at the same potteries as the Arab types.

3. In the middle of the photograph, a group of middle-sized bowls may be seen standing across a gangway between two groups of the ovoid jars of class 2. These (though the bright light does not show this very clearly) were of a dull, blackish clay, uniformly smoked in the firing, and in strong contrast with the creamy white surface of the Arab and Græco-Roman fabrics. Unlike them also, these vessels were wholly hand-made, and, so far as I could discover, their makers, who were country "Arabs" or Arabized Berbers

from the neighbourhood, did not employ the potter's wheel at all. The forms were very rude and clumsy, but characteristic features were the gourd-like outline of the body, the absence of a standing-base, and the frequent presence of a funnel-like spout set low down in the side. This spout is well shown in the pot immediately to the left of the circular shadow. With these features, and their hand-made fabric, these pots stand wholly apart from the two later groups described above: and, seeing that the knowledge of the potter's wheel was introduced into the neighbourhood of Leptis not later than the seventh century B.C., and probably nearer the ninth, the conclusion is inevitable that these pots represent an uncontaminated survival from a yet earlier period. This conclusion is itself borne out by the comparison of the forms, and the manipulation, with those of the ruder wares of the Bronze Age in Cyprus and Palestine on the one hand, and of the Tunisian dolmens on the other. If anything, in fact, the modern examples



NATIVE-MADE POTS FOR SALE AT LEBDA (KHOMS) IN TRIPOLI.

are more rude and primitive than the real Bronze Age pottery; in particular, there is no trace of the red-polished slip which is so characteristic of the earlier Bronze Age in the Eastern Mediterranean.

Fragments of this same hand-made pottery are common in the maritime desert between Lebda, Tripoli, and the escarpment of the Tarhuna plateau, wherever the drifting sand has exposed the desert-floor. These may be modern, like the pots in the bazar at Khoms; they may be contemporary with the Roman pottery and house foundations, with which they are often associated; or, thirdly, they may be as old as the neolithic scrapers and arrow points which also abound in these lacunæ among the sand drifts. The desert itself is probably not older than the Arab conquest, and under the present misrule is rapidly extending still; but the age of the desert does not really affect the question of the age of the potsherds on its floor: and the very uniformity of

the hand-made fragments wherever they are found makes as much for, as against, the view that, in spite of Phœnician, and Greek, and Roman, and Arab occupation of the country, a neolithic industry has been preserved practically unaltered to the present time.

A noteworthy detail about the Græco-Roman pots of class 2 is that wherever they *do* show variation from the analagous types of Greece or Southern Italy, it is in the direction of the series of older Græco-Phœnician forms which is common to the necropolis of Carthage and the older Iron-Age tombs of Cyprus and the Syrian coast. Now Lebda, as has been noted already, lies almost on the site of Leptis Magna, one of the most important centres of trade and industry on the Tripolitan coast; a town of Phœnician origin, which remained hostile to Greek enterprise as late as the end of the sixth century B.C., but became Hellenized rapidly in the fifth and fourth. We have here, therefore, in the midst of a series characterised by violent breaks, the survival of a group of forms which are the result of exactly the opposite phenomenon—gradual and effective assimilation.

J. L. MYRES.

REVIEWS.

Left-handedness.

Lueddeckens.

Rechts- und Linkshändigkeit. Von Dr. Fritz Lueddeckens. Leipzig, Wilhelm Engelmann, 1900. Pp. vi, 82, and Appendix of Questions. 11 woodcuts. **84**
Price 2s.

After mentioning in his preface that by right and left handedness we imply that one half of the body has a stronger development than the other, and that this fact has received too little attention in literature, and saying that the neglect of such an important fact for doctors or teachers and the whole of mankind is only to be explained by the circumstance that there is so much specialism now-a-days in all branches of science, the author wishes the reader to note that he is far from libraries and laboratories and is engaged in a very varied practice.

The pamphlet is divided into various sections—an anatomical and physiological introduction, then the consideration of a higher blood pressure in the left side of the head, eye, and brain; right-handedness, sleep, &c. Then a section dealing with those cases in which there is an equal blood pressure on both sides of the head. (double personality); and, finally, a section dealing with those cases in where is a higher blood pressure in the right side of the head, eye, brain, &c., development, mental powers, anomalies of speech, left-handedness, and sleep.

There is an appendix of questions intended to still further elucidate left-handed, and to add to statistics. It is of considerable interest, and medical men and anthropologists should try to use these questions, and thus aid the investigation of a most interesting subject.

Since Sir Thomas Browne wrote "Of the Right and Left Hand" in "Vulgar Errors," many scientists and others have dealt with the subject, perhaps the chief authorities being Sir B. Wilson, Sir Charles Bell, Professors Gratiolet, Buchanan, and Struthers, and Drs. Barclay and Brown-Sequard. They advance different theories, but probably Dr. Lueddeckens is correct in attributing the right and left handed to the higher blood pressure in the opposite cerebral hemisphere, although we do not think he gives sufficient weight to habit, for in our experience quite young children can be readily trained to use both hands with equal facility. And this, indeed, is the important point, and one to which the author gives prominence, that the weaker hand should be developed as much as possible, for there can be no doubt that, not only is it very useful to be ambidextrous, but that the constant use of both hands from earliest infancy increases brain power. Dr. Lueddeckens divides the human race into three groups: first, the majority, in which we find a higher blood pressure in the left side of the head,

brain, eye, &c., and right-handed; secondly, rare cases where, at least theoretically, we have an equal blood pressure on both sides of the head, &c., but we do not think that this condition in any way gives rise to dual personality, nor in these cases do we think that there is so much alternation in the blood pressure in the right and left sides of the brain as the author apparently does; and thirdly, numerous persons in whom the blood pressure is higher on the right side of the head, &c., and who are left-handed. No statistics are available to show what proportion these persons bear to the majority.

Probably the most important part of this brochure is that which deals with the eye and the differences in refraction, cuteness of sight, and size of the pupil met with in persons who are either right or left handed. This subject should certainly be further investigated, and it would be well if any of our readers who know left-handed persons would examine them according to Dr. Lueddeckens' scheme and communicate with him.

R. W. F.

Schleswig-Holstein : Bronze Age.

Splieth.

Inventar der Bronze-alter Funde aus Schleswig-Holstein. By Dr. W. Splieth.

Leipzig: Lipsius & Fischer, 1900. 8vo. (9½ ins. by 6½ ins.), 89 pp., with

illustrations in the text, and thirteen lithographed plates. Price, 5 marks (5s.).

This is an admirable little book. A brief introduction is followed by a classification of all the known discoveries; first into general periods, which correspond with those established for Scandinavia by Montelius, and for Denmark by Sophus Müller; second, within each period, according to the types of objects which occur. Then follows, for each period separately, a very full and detailed inventory of the individual finds, giving the place of discovery, the museum in which the finds are preserved, the character of the finds, and the number of specimens found of each type of object, the form of the interment, where that is known, and a reference to the periodical in which the discovery is described in detail. The characteristic types of implements, vessels, or ornaments are figured at the end on thirteen lithographic plates.

The author is greatly to be congratulated on the completion of a laborious and most valuable piece of work, which will be indispensable to students of North German antiquities.

J. L. M.

Religion : Greece.

de Visser.

De Græcorum Dīs non referentibus speciem humanam. M. W. de Visser,

8vo., pp. 70. Leyden.

This treatise, both in length and in value, surpasses the average standard of the "Doctor-dissertation" of the continental universities. Its main object is to collect the evidence concerning the worship of stocks, stones, and trees, plants and animals in Ancient Greece, and its main theory is that the two latter superstitions may be traced back to totemism. The citations, partly from literature, partly from monumental sources, form the bulk of the work, and also its most valuable part. Having spent some time in gleaning in the same field, I am glad to express my obligation to Dr. de Visser's work, which has supplied me with some passages which I had overlooked. His collection has been made with great care, and will prove of great assistance to anyone who is working on the same ground. It is therefore all the more curious that he should have missed the references to the *Ὀφιογενεῖς*, the Snake-clan in Cyprus and at Parion, from which the hypothesis of Greek totemism derives a stronger support than from any other evidence that has ever been brought forward. (Pliny N. H., 28, 30; Strab., 588; Varro apud Priscian. X., 32). Yet Frazer has specially noted the *Ὀφιογενεῖς* in his *Totemism*, and Dr. de Visser draws most of his totemistic ideas from this treatise. Tree-worship is rightly illustrated by the ritualistic practice of hanging images or masks on certain trees; but he might have enriched his store of illustration

by reference to the interesting story preserved by Plutarch concerning Charila at Delphi (Quest. Græc., 12).

While noticing omissions, one may mention that the sacrifice to Dionysos in Tenedos of a bull calf dressed in buskins and a saffron robe, the occasional sacrifice to Athena on the Acropolis at Athens of a goat, the animal that was usually tabooed in her cult, the record concerning the Brauronian cult that in offering the goat the worshipper called it his daughter, are facts of importance for the writer's hypothesis, but have been ignored.

I should be inclined to regard as erroneous his explanation of the name Κύνεσις as derived from Κύν (p. 163); of Αἰγός as the Goat-Man (the name is probably an epithet of Poseidon from the Eubœan city Ægæ); and one may protest against the indifference to etymological laws that confuses forms so distinct as Αἰκάσις and Αἰκείσις (p. 160). It is pressing his hypothesis too far to quote the cult-titles of Ἥρα Ἰππία and Ἀθηνᾶ Ἰππία in support of it (p. 262), for these titles are not early, and are simply affixed to the higher deities as drivers of chariots, and are not drawn from the same field of primitive belief as that to which the cults of the Horse-Poseidon and the horse-headed Demeter belong.

On page 225 he seems to suggest that every animal offered to a divinity was once his totém-animal; but surely this is going far beyond the bounds of legitimate hypothesis. The same animals are offered to most Greek divinities; and it is only when the sacrifice is accompanied with very peculiar ritual—when, for instance, the animal is usually not offered, but reverentially spared, and only offered with expressions of sorrow and contrition, that the totemistic hypothesis should be allowed a hearing.

As regards the general character of his commentary and the main points of his thesis, one may commend the spirit of the whole work, and regard it as an earnest of future scientific production. It is matter for congratulation that the younger generation of students in Holland appear to have shaken off the fetters of the theories of Symbolism and Nature Personification, under which many of the German writers on classical religion and mythology are still stumbling. Also I am entirely in accord with some of Dr. de Visser's definite conclusions; for instance, with his view that the various myths and legends in Greece concerning stones point to an original stone-worship; that some ἀγάλμα, such as the Herme, formed the connecting link between the aniconic age and the period of idolatry (I had put forward the same theory, when it was more heretical to maintain it, many years ago in a paper in the *Archæological Review*). I agree also with his objections to Dr. Jevon's theory that the cult-pillars and ἀργεῖ λίθοι were originally altars. Nevertheless, some of the writer's argumentation appears to me thin and inconclusive, and it would be better if he were more precise in the use of certain catchwords of Comparative Religion, such as "Fetichism": the Portuguese seem to have known what they meant by the word, but some later writers do not.

There are certain serious gaps in his study, which he will no doubt be able to fill up. The very *à priori* argument on p. 255, where he maintains that idolatry must have existed in the Mycæan age, will be probably modified when he has been able to study the monumental evidence of that age more deeply, and especially Mr. Arthur Evans' recent discoveries (e.g., *Journal of Hellenic Studies*, xxi., 99 ff.).

But it is chiefly in his theory of Totemism that his views require to be reconsidered in the light of more recent evidence. It is from Dr. Frazer's *Totemism* that most of them are derived: hence such terms as "sex totems," "individual totems," the propriety of which has been for some time matter of doubt, are allowed to appear in his account. More serious is the error which Dr. de Visser commits of supposing that the totemistic tribes of Australia and North America all count descent through the female (p. 7) and that, generally speaking, Totemism and Matriarchy are co-extensive and mutually imply each other (p. 230-231). Sufficient evidence against this is supplied by Mr. Frazer

himself, and still more by Professor Baldwin Spencer in his book on the Australian tribes. But believing that Matriarchy was indicative of Totemism, Dr. de Visser should have more carefully weighed the question about the prehistoric prevalence of Matriarchy in Greece. The indications are faint and doubtful, and the foolish story preserved or invented by Varro, which is the only citation given, is almost valueless.

The evidence laboriously collected by Dr. de Visser concerning Totemism in Greece is cumulative, but is not convincing. The worship of animals is no proof of it, for this can arise, as the writer is himself aware, from other causes; the wearing of sacred skins is no proof of it, nor the appellation of an animal by a term of human kindred, as the Athenian called the sacrificed goat his daughter. This may arise from a deliberate ritualistic fiction, or from affection, as when a Sioux tribe speak of the Buffalo as "their little grandfather," though he is not their totem.* Nor need we be too prompt with the totemistic explanation, when all that we know is that certain families in Greece and the Mediterranean called themselves by the names of animals or plants. We may regard Totemism as proved of early Greece, only when we have discovered that certain clans called themselves by the names of plants or animals, whom they regarded as, in some way, akin to themselves, and, therefore, treated reverentially; and if this tribal usage were connected with exogamy, we should regard them, in respect of this social institution, as on a level with certain Australian and American tribes. But we never have found anything quite approaching to this in Greece proper, nor are likely to find. The record of the Ophiogeneis in Parion and Cyprus satisfies the criterion best. In Italy we find no valid support for the totemistic hypothesis, save Servius' story about the Hirpi. The extreme rarity of strong attestation of Totemism in the Mediterranean area may excuse my quotation here of a passage in Diodorus (20, 58), who states that, in a district of Libya, monkeys were worshipped by the natives as divinities, were offered food and shelter, that their slaughter was regarded as a heinous crime, and that the Libyans called their children after the animals' names.

In conclusion, it may be said that Dr. de Visser's book somewhat overstates the Totemistic case, and that he is dominated by the enthusiasm of a theory which, in England, has sown some wild oats, and is now being chastened by a more cautious spirit of criticism. Anthropologists are coming to see that Totemism is rather a secular and a social fact than a religious system, and that no such important rôle can be assigned to it in the evolution of higher religion as was once supposed. Whether any Aryan people ever possessed it as a tribal institution is a question that still remains open to anthropological inquiry. The answer from Vedic-Iranian record is mainly negative, from Hellenic very dubious, and no one has succeeded in following any track of Totemism among Teutonic and Scandinavian peoples.

Yet in regard to Greece, where there is much that is non Aryan, it is well to weigh the question again and again, and Dr. de Visser has done useful work in presenting the case with some approach to completeness.

L. R. FARNELL.

Colour Vision.

Bosse : Holden : Rivers.

Primitive Colour Vision. By W. H. R. Rivers. *Popular Science Monthly*, Vol. LIX., pp. 44-58, 1901. **87**

The Order of Development of Colour Perception and of Colour Preference in the Child. By W. A. Holden and K. K. Bosse. *Archives of Ophthalmology*, Vol. XXIX., pp. 261-277, 1900.

The Colour Vision of the Eskimo. By W. H. R. Rivers. *Proc. Cambridge Philos. Soc.*, Vol. XI., pp. 143-149, 1901.

* Dorsey in Annual Report of the Bureau of Ethnology, Smithsonian Institute, 1889-1890, p. 381.

The first of these papers deals chiefly with the controversy as to the possibility of an evolution of the colour-sense of man within historical times. In the work of the Cambridge Anthropological Expedition to Torres Straits it was found that the natives of several Australian tribes of the Fly River district of New Guinea, and of the eastern and western tribes of Torres Straits, showed different stages in the development of the nomenclature for colour which corresponded closely with those arrived at by Geiger from a study of ancient literature. The Australians of the Gulf of Carpentaria only seemed to have definite terms for red, white, and black; the Papuans of the Fly River had, in addition, a definite term for yellow and an indefinite term for green, while blue and black were still confused. The members of the eastern tribe of Torres Straits had no native term for blue, but had adopted the English word, while the members of the western tribe had two words, used for green and blue, but these were very frequently confused with one another; the two words had not yet become terms by means of which the two colours could be definitely distinguished from one another.

Gladstone and Geiger believed that the defective language for colour found in ancient literature indicated a corresponding deficiency in colour sense, but their views have received little support, and it has been generally held that there is no relation between language and sensibility, and that people whose language for colour is entirely defective may have a well-developed colour-sense.

In general, there is little doubt that the latter view is the correct one, and that Gladstone and Geiger went too far in their conclusions, but, at the same time, there is something to be said in favour of their main position, that there has been a development of the colour-sense in man.

In Murray Island it was found, on quantitative investigation, that the natives of this island showed a distinct degree of insensitiveness to blue, *i.e.*, to that colour for which they had no native name. This deficiency was only partial, and may possibly be explained by the influence of the pigmentation of their eyes, but, nevertheless, it is significant that the colour to which they should have been found to be insensitive should be that colour for which they have no name, and which they tend to confuse in nomenclature with black.

There is little doubt that any physiological insensitiveness which may exist in Papuan and other races cannot wholly explain the indefiniteness in the nomenclature for blue which is so often found to exist, and in the paper cited various other factors are considered which may have contributed to produce the predominance of red and insignificance of blue in primitive colour nomenclature.

In relation to the general problem of the evolution of the colour-sense in man, it is pointed out that, in addition to the evidence of language, other departments of knowledge must be called upon for help.

The archaeological evidence is rapidly accumulating, and requires more careful consideration from this point of view than it has hitherto received. The monuments, pottery, &c., of some races, as the ancient Egyptians, seem to show a high degree of appreciation of green and blue, while beads of both colours have been found even in the graves of the prehistoric Egyptian race. In the sculpture of the Greeks, however, there seem to be instances of eccentric use of blue, which, taken together with the evidence of language, strongly suggest that the sensibility for blue may have been imperfectly developed.

The existence of a well-developed colour-sense in many animals, especially in insects and birds, has been by many regarded as a conclusive argument against the existence of any imperfection of the colour-sense in primitive man. In the animals most nearly allied to man, however, the evidence for the existence of a colour-sense is very inconclusive, and there is, on biological grounds, no inherent improbability in the view that the colour-sense has developed *de novo* in man.

There seems to be little doubt that the power of appreciating colour is of comparatively late development in the individual human being, and if the history of the individual is any guide to the history of the race, the colour sensibility of the child seems to support Geiger's view. Nearly all workers on this subject agree that the child begins to appreciate colours comparatively late (18 months to two years), and then distinguishes red and yellow earlier than green and blue. One of the chief difficulties in the experimental investigation of the colour-sense, both in the animal and in the child, is to ascertain that the subject is reacting to a difference of colour and not merely to a difference of luminosity. There is little doubt that both animals and infants tend to react to bright colours, and most investigators have not taken adequate precautions to overcome this difficulty. In the second of the papers cited at the head of this notice, Holden and Bosse have paid especial attention to this point, and have noted the reactions of a number of children when patches of colours are placed before them on backgrounds of the same luminosity as the colours. They find that reaction to colours occurs earlier than is usually supposed, viz., at six to eight months, and that up to ten months infants react more readily to red, orange, and yellow, than to green, blue, and violet. They also tested a large number of children of different ages to find which colour was preferred, and found that below the age of two the preference for red was universal, while above this age blue is often chosen, and above the age of four years the preference for blue becomes almost as general as is the preference for red at an earlier age.

The subject of the evolution of the colour-sense is not one upon which any definite conclusions are, at present, possible. The facts of colour-blindness and the nature of the vision of the peripheral retina of the normal eye have led many to suppose that, in the development of the colour-sense, the sensibility for yellow and blue has developed earlier than that for red and green. The physiological evidence seems to point to a late development of red, which is difficult to reconcile with the predominance of red in ancient literature, in the languages of existing savage and barbarous races, and in the colour-vision of the child. We are, at present, almost wholly ignorant as to the causes and essential nature of colour-blindness, and in this condition of ignorance it seems as if the philological evidence should not be wholly disregarded by those who are endeavouring to trace out the path along which the colour-sense of civilised man has reached its present stage of development.

The third of the papers cited at the head of this notice is chiefly devoted to an account of the colour vocabulary of a party of the Labrador Eskimo who were recently in London. These people had a perfectly definite term for blue, and showed, in general, a high degree of development of colour language, nearly all shades and tints of colour being denoted by modifications of six words for white, black, red, yellow, green, and blue. It seems remarkable that people living in Labrador should have a more fully developed language for colour than those living in tropical lands, and it is suggested that possibly when colour is only a transient occurrence in the year's experiences, it may receive more attention and therefore receive more definite nomenclature than in those parts of the world where luxuriance of colour is so familiar that it awakens little interest.

W. H. R. R.

Aryan Race.

Penka.

Die Ethnologisch-ethnographische Bedeutung der megalithischen Grabbauten.

By Karl Penka. 1900. Mittheilungen der Anthropologischen Gesellschaft in
 Wien. xxx, pp. 25-43.

88

In this short paper Dr. Penka estimates the result of recent study of northern antiquities and social institutions in their bearing on his own view that the tall, blond, long-headed race of North-western Europe is to be regarded as the originator of Aryan

language and culture. At the same time he replies to a number of criticisms of his view which have appeared since the publication of his paper on the "Home of the Germans." (*Die Heimat der Germanen*. Mitth. Anthr. Ges. Wien. xxiii, 64 pp.)

The starting point of his argument is the interpretation which should be given to the megalithic tomb-structures of Northern and Western Europe, with their counterparts in North Africa and Syria, in the Crimea and the Caucasus, and in India. Recent investigators agree that the similarities of type, and even of detail, among these monuments, preclude the idea of coincidence, and argue for their builders a common culture, if not a common race. Both Montelius and Sophus Müller interpret the series from East to West, and from West to North, and ascribe this type of tomb-structure to "Oriental influences." Penka, on the other hand, while accepting the conclusion that the dolmens represent a common culture, disputes the hypothesis of Oriental influence, and reads the series the other way, pointing out that while in the North these monuments go back into the Stone Age, in France and the South they belong to the Bronze Age; and that if they embody beliefs which came from the South and East, then ideas must have travelled faster than the knowledge of metal tools, whereas in the transmission of culture the reverse order is the rule. Montelius's view, moreover, that the "Aryans" entered Europe by way of Asia Minor, contradicts all that is known of the early movements of Aryan-speaking peoples in the Hellespontine area.

A survey of the history of the problem shows:—(1) that the "Keltic" theory of the origin of the dolmens and the subsequent "pre-Aryan" or "Finnish" theory rested on insufficient knowledge of their distribution; (2) that the discovery of dolmens in North Africa and Syria (which has given rise to the dominant "Berber" theory), has proceeded *pari passu* with the discovery both of actual survival of a tall blond dolichocephalic race in the same areas, and of evidence in Egyptian portraiture of its wider extension in the second millenium B.C. Penka, therefore, adheres to his old view that the culture represented by the dolmens originates with the dolichocephalic blonds in Southern Scandinavia and the Danish peninsula (where alone a "mesolithic" transition can be followed from the paleolithic to the neolithic stage); and that the apparent intrusion, in Pomerania and Bohemia, of later types of implements from the north-westward is the counterpart of the spread of dolmen building in Western Europe.

The stress laid by Montelius and Sophus Müller on the view that the megalithic tomb-structures perpetuate the characteristics of the houses and mode of life of the living, leads Penka further to the conclusion that the houses of the dolmen-builders were of the same simple one-room type, with porch or *prodomos*, which is characteristic of the houses of the earliest Aryan speaking intruders in the south;—the Alban hut-urn, the *templum in antis*, and the Homeric *megaron*. This one-roomed house leads, among pastoral and agricultural peoples, to the "homestead" type of settlement (*Einzelsiedlung*), consisting of a number of single store-houses grouped round a courtyard; where the single living-chamber was distinguished from the barn, the byre, and the stable, only by its hearth fire, and by the consequent smoke-stains which gave it the names of *atrium* and *melathron*. We are thus led to the courtyard type of homestead, which forms so great a contrast to the "Saxon" type of house, and which with its many departments under a single roof, Penka regards as later, and as a result of life in villages.

Again, the fact that, unlike the clustered tumuli of the Bronze Age, the megalithic tombs lie singly, leads Penka to the inference that their builders lived, not in villages, but in scattered homesteads of the type above described. Now this homestead-type of settlement, with its simple land-system of self-contained and continuous farms, extends from Ireland and Wales to Belgium, and all over Southern and Western France, as far as the Pyrenees and the Maritime Alps; surviving also in Westphalia and Friesland, and reappearing among the early Slavs. This state of society Penka compares with the

fact that Aryan speech has no word for "village," and that all the words, which in this or that Aryan language mean "village," can be traced in use elsewhere in the earlier sense of "homestead."

Meitzen's theory that the "homestead" type is specifically Keltic, and Henning's criticism of it, both contain valuable suggestions, and can be reconciled by admitting Penka's own hypothesis that the spread of his blond Aryan dolmen-builders was effected in two distinct stages, each with its appropriate type of settlement. So long as no serious resistance was met, expansion was very gradual, and the homestead type was adequate to the needs of the settlers (as it still is in America, Africa, and Australia); it is only when later comers are attempting to establish themselves in an area which already supports a homestead population (*œdificiis occupatis*, like the Usipetes and Teneteri, Cæsar, B.G. iv. 1) that the need arises for the closer organisation of the village communities, which we find among the Kelts in Spain and Italy, the Hellenic invaders of Greece, and the Germanic peoples of the north. The Slavonic "Rundling," which Henning has already shown not to be truly Slavonic, Penka attributes to "re-Germanisation" of the areas in which it is found.

The presence of "unfree" members in all early Germanic communities shows that considerable numbers of this non-Germanic population survived among their conquerors and the children of "free" and "unfree" alike were brought up together without distinction of culture: *dominum et servum nullis educationis deliciis dignoscas* (Tac. *Germ.* 20). Under these circumstances it was inevitable, even without racial mixture, that the children of the blondes should pick up a debased form of their mother tongue. Inevitably also, however, in spite of all discouragement, cross-breeding did take place even among the purest blond races. In Central Sweden, for example, there is considerable admixture of dark blood, and S.W. Norway shows a blond but strongly brachycephalic strain. There is, therefore, every reason to expect that corruption of "Aryan" speech in the immediate neighbourhood of the "Aryan Home" which is actually found to exist among the Germanic languages.

It is not to be expected that Penka's vigorous reassertion of his original hypothesis will pass unchallenged among either philologists or archaeologists, and his criticism of the current interpretation of the dolmen-series in particular is certain to provoke a reply; for it certainly seems to touch a weak point in the argument as stated hitherto by its leading exponents, and it will be of interest to see what modifications it will be found to require, or what vital point, if any, has been omitted from Penka's calculation.

J. L. M.

PROCEEDINGS OF SOCIETIES.

Proceedings.

Soc. d'Anthr. de Paris.

Sommaire des Procès-verbaux de la Séance du 6 juin 1901.

Le Président fait connaître qu'il a assisté, le 28 mai dernier, à la séance de l'Institut anthropologique de la Grande-Bretagne et de l'Irlande, à Londres. Il a été accueilli avec la plus grande courtoisie et il est particulièrement heureux de s'acquitter de la tâche agréable dont il a été chargé, de transmettre à ses collègues de la Société d'Anthropologie de Paris l'expression des sentiments de cordiale estime des membres de l'Institut anthropologique de Londres.

M. Meyer présente des photographies de femmes de la vallée de Munster et d'Alsaciennes.

M. Giroux présente des photographies de monuments mégalithiques du département de l'Eure.

89

M. Zaborowski offre au nom de Mme. Spencer Warwick un moulin à prières du Thibet et un vieux Coran, en arabe.

M. Delvincourt, palethnologue est élu membre titulaire et M. Moriz Hœrnes membre associé étranger.

M. Thieullen—Os travaillé à l'époque de Chelles.

M. le Dr. Anthony fait une communication sur les modifications des muscles consécutives à des déformations osseuses. Discussion : MM. Manouvrier, Sanson, Laborde, Regnault.

M. Yves Guyot fait une communication sur les races indigènes de l'Afrique du Sud d'après l'enquête officielle faite par "The South African Committee" présidé par M. John Macdonell. Discussion : M. Letourneau.

Proceedings.

Anthropological Institute.

Ordinary Meeting, June 11, 1901. Dr. A. C. Haddon, F.R.S., President, in the chair. 90

The election was announced of Rev. Canon Hewitt and Mr. W. D. Webster as Fellows of the Institute.

Mr. R. Morton Middleton exhibited, on behalf of the South American Missionary Society, a large series of implements and other objects, including swan-gullet necklaces, whalebone snares, featherwork, &c., from the Yahgans of Tierra del Fuego, and introduced Mrs. Burleigh, who spent some 15 years among the Yahgans, and gave a number of additional data in regard to them. The exhibit was discussed by Dr. Garson Mr. Balfour, and the President.

Mr. G. Coffey read a paper on Irish Copper Celts, which was discussed by Dr. Gladstone, Mr. Lewis, Mr. Myres, Mr. Balfour, and the President. The thanks of the Institute were returned to the authors of communications.

The meeting then adjourned until June 19 for a joint meeting with the Folklore Society.

Extraordinary Joint Meeting with the Folklore Society, June 19, 1901. Prof. A. C. Haddon, F.R.S., in the chair.

Prof. Haddon vacated the chair in favour of Mr. E. W. Brabrook, President of the Folklore Society. Mr. Brabrook alluded to the loss sustained by the Society through the death of Miss Florence Grove, a member of the Council.

Mr. E. S. Hartland, F.S.A., exhibited the collection of Musquakie bead-work and other objects, presented by her to the Folklore Society, and to be deposited in the Museum of Ethnology at Cambridge. The exhibit was discussed by Messrs. H. Balfour, Haddon, R. C. Temple, Rev. J. Sibree, and the President.

Mr. R. Shelford exhibited two charms against stomach-ache from Borneo.

Mr. H. Balfour read a paper by Mr. W. G. Aston, C.M.G., on "Japanese Gohei and Ainu Yuao."

Mr. N. W. Thomas read a paper by Mr. E. Tregear on the "Spirit of Vegetation."

The thanks of the meeting were returned to Miss Owen, and to the authors of the papers, which will be printed in full in the *Journal* of the Institute, Vol. XXXI.





TEMPLE OF HIBIS, OASIS OF EL KHARGEH.

1. INTERIOR. 2. OUTER WALL.

ORIGINAL ARTICLES.

Egypt: El Khargeh. With Plate H. Myers.

Four Photographs from the Oasis of El Khargeh, with a Brief Description of the District. By Charles S. Myers.

91

The four photographs, forming the subject of this note, were taken by me in April of this year, during a visit to the Egyptian Oasis of El Khargeh. Shortly after my return, the National Printing Department of Cairo published an elaborate work on the topography and geology of this Oasis, by Dr. John Ball, of the Government Survey. No future writer on the subject, it appears to me, can avoid incurring a debt to him, and most of my remarks will be found already incorporated in his book in some form or other. So few photographs, however, have been taken in this Oasis, that it seems desirable to place my own on record. I trust that the following description will not prove uninteresting:—

The Oasis of El Khargeh is situated about 200 kilometres from the west bank of the Nile, extending roughly between the latitude of Girgeh and Edfu, that is, from $26^{\circ} 2'$ to $24^{\circ} 5' N$. From the Nile valley roads lead to it from Assiut, Girgeh, Esneh, and Sohag, probably also from Tahta, Farshut, and other villages. I myself started from the village of Mehasneh, and followed the Girgeh road. My companions were Messrs. Mace and Anthony Wilkin, whose sad death shortly after robbed the world of so promising a traveller. The roads to the Oasis, or *Wah*, are gained by a steep ascent to the plateau overlooking the valley of the Nile. Thence they stretch across a wide plain, generally uninteresting, save for the worked flints and areas of broken pottery scattered upon it. A desert "road" is nothing more than a series of parallel tortuous tracks, trodden and worn during ages past by the feet of camels. Here and there a camel's skeleton attests the ill luck of some belated traveller. From Girgeh to the chief village of El Khargeh Oasis, called by its name, is a distance of some 193 kilometres, or a ride of between fifty and sixty hours. The extent of the entire Oasis is over 3,000 square kilometres, of which only an infinitesimal portion, of course, is under cultivation. The Oasis depends for its fertility on the water obtained from numerous springs and wells. In former times El Khargeh formed the last of a series of resting places in the slave trade-route from Darfur to Assiut. Increasing poverty has resulted from the diversion of all trade from the desert to the valley of the Nile. The wells are now allowed to be covered with sand. Every year less land appears to be under cultivation. An oasis does not, as is popularly supposed, consist of a mere collection of date palms, standing near a stagnant pool, and surrounded by a small village: it is a wide area, excavated to a depth averaging, perhaps, 300 metres out of the surrounding plateau. Thus the Oasis appears at first sight far more desert-like than this plateau of the Libyan desert. From the north-east edge of the Oasis to the village of El Khargeh, in whose neighbourhood these photographs were taken, the distance is rather less than 35 dreary kilometres. Along this floor of the Oasis the sand is blown from north to south as the wind sweeps it down from the surrounding plateau. The ground is strewn with sand-dunes which are, as Dr. Ball notes, slowly but constantly moving owing to the incessant action of the winds, especially in early summer. As to the original formation of the Oasis, Dr. Ball concludes that the excavation, though probably begun by the action of water, was continued, and indeed is still being continued by this combined agency of wind and sand. Thus the sandy character and the spread of the Oasis are ever increasing.

In the reign of Thotmes III. (about 1500 B.C.) the western oases were divided into the Northern and Southern oases, the latter of which probably comprised those of El Khargeh and Dakhleh. These two, or perhaps only the former, became afterwards known as the Oasis magna. From an early time, certainly before 1000 B.C.,

El Khargeh was used as a place of banishment. To it, in the year 434 of the Christian era, Nestorius was exiled because of his religious convictions. There is very little doubt that the remarkable necropolis, a tomb of which is here shown (Fig. 1), and numerous monasteries, especially those towards the north end of the Oasis, are the remains which the small bands of his followers have left behind. At the present day the Oasis is devoid of Christian population. No doubt, after the Mahomedan conquest of the



FIG. 1.

seventh century, it became impossible for the Copts to protect themselves from the attacks of the marauding Bedawin without the support which the Government had formerly given them.

This Christian necropolis, called "Geba" by our guide, lies on a commanding hill, about 4 kilometres north of the village of Khargeh, and consist of some two hundred ruins, which are so built that they resemble the houses of some long deserted town rather than the tombs of a disused cemetery. The buildings vary greatly in size; they are all rectangular and of unburnt brick. The larger are, perhaps, 12 metres high, and are usually ornamented with pilastered columns; the smaller are covered with a beehive-shaped roof, thus resembling the ordinary sheikh's tomb of the present day in Egypt. These buildings are coated with plaster on the inside, and their walls are often covered with scribbling in Greek, Coptic, or Arabic characters. Most of the tombs consist of a square chamber, in the centre of the floor of which is a pit. The pit, my native guide told me, leads down to diverging passages, in one of which the corpse was buried. Hoskins, writing in 1837, found mummy-cloths of various qualities scattered about these tombs. Not only in their interment at the distant end of a vertical shaft and in mummifying their dead did the early Christians of the Oasis thus continue the older Egyptian practices; but they appear also to have persisted in using the upper chamber as a receptacle of the offerings to the soul of the deceased, for on the walls of several tombs that I visited I noticed small niches which were no doubt used for this purpose. Moreover, in several of the tombs and in the largest building of all, which must certainly have been a chapel, the *anch* ⲁ, the ancient and familiar symbol of life, was painted. It appears to have preceded the use of the cross in the Oasis. I regret that I did not photograph the interesting chapel I have just mentioned. Three arches, two pointed and the third rounded, separated on each side a narrow aisle from the centre of the building. A partition wall across the building separated the body of the chapel from a small transverse alley in the rear, to which a narrow archway in the centre of the wall gave access. Opposite to the archway the wall of this cross-passage bore a niche and a fairly preserved but crude painting entitled ABPAAM and ICAK. A far more perfect and a really well executed painting one of us (Mr. Mace) discovered in the dome of a smaller brick building. Here on the white plaster were depicted

certain early Christian saints, bearing these names in Greek characters : Abraham, Isaac, Sarah, Adam, Eve, Thekla, Paul, Mary, Noah, (?) Jacob, Euche, Dikaiosune, Daniel, and Irene. Irene holds the *anch*, Dikaiosune a pair of scales. Abraham has two knives in his hand, while a ram appears out of the bush. Noah stands with seven companions in a rudely made ark. Remains of pottery suggest that the town to which this necropolis belonged lay at the foot of the hill. It is scarcely necessary to point out how promising a harvest the first excavator of this district is likely to reap.

Slightly nearer the village of Khargeh stands the ruined temple of *Hibis*, built of sandstone, which is plentiful in the Oasis. The greater part was erected by the Persian kings, Darius I. and Darius II., between 521 and 424 B.C. It is one of the most important monuments of this 27th or Persian dynasty which remain in Egypt. Cambyses himself is believed to have visited the Oasis with an army, which perished in the desert immediately afterwards. This temple bears also the names of the king Amyrtaeus, of the 28th dynasty, and of Nectanebo, 378 B.C., of the 30th dynasty, the last native king of Egypt. The one photograph (Plate H., Fig. 1) shows beneath the cornice very clearly the cartouche of Darius; the other (Plate H., Fig. 2) shows the Persian King making offerings before Egyptian gods on a wall which has obviously



FIG. 2.

been restored, probably by one of the late Roman emperors who took some interest in antiquities. On the first pylon of the temple which stands in what is now the garden of a peasant is a lengthy inscription of a Roman general, dating from the time of the Emperor Galba, A.D. 68.

The village of *Khargeh* is the largest in the Oasis, containing about 4,500 inhabitants, and the quarters of the Egyptian officials. The Oasis forms part of the *mu-diriya* of Assiut, between which and the principal village a fortnightly post has been established. Dr. Ball notes that the number of palm trees (44,042) taxed in this village exceeds two-thirds of this in the entire Oasis. Besides this large area of palm groves, there are numerous outlying plots of cultivated land. But the inhabitants are poor, and appear ill-fed and of poor physique. Khargeh contains no bazaars. The greater part of the streets are covered in with flat roofs of palm branches, so as to form long dark tunnels about a

metre wide and $1\frac{1}{2}$ to $2\frac{1}{2}$ metres high. The side walls are made of mud, into which are built the doorways of the peasants' houses, with rooms occasionally extending over the street. Through such dark, tortuous, narrow alleys the stranger gropes his way, now emerging into daylight (as shown in Fig. 2), but soon plunging again into the general gloom of a rabbit warren. The streets branch in a bewilderingly complex fashion, so that occasionally the wandering visitor discovers that he has entered a *cul de sac*, or perhaps finds himself unconsciously straying within a peasant's hut. Formerly the streets of the bazaars in Cairo were somewhat similarly covered in. And to this day the bazaars in Assiut are so protected. Mr. Somers Clarke informed me that he had seen roofed streets in certain disused villages of the Nile-valley; they appear to be common also in those of the Berbers. As a village of Egypt, Khargeh is noticeable for the scarcity of its dogs and for the politeness and lack of curiosity displayed by its folk towards strangers. The general stature of the villagers is small, probably less than 170 centimetres. The hair of the head is shaven, somewhat curly, black and fine. The skin varies from a yellowish to reddish brown, according to the extent to which it has been sunburnt. The nose is short, straight, and prominent, wide, but not very flat. The eyes are curiously small and brown, the cheek bones and parietal eminences are prominent. The forehead is narrow and sloping, the chin feeble, the lips thin. There was an absence of strong Soudanese admixture. I took measurements upon some sixteen people. These I shall incorporate later in a general anthropometric survey which I hope to make during the ensuing winter in the Nile valley.

New Zealand: Forgeries.

Smith: Edge-Partington.

Forgeries of New Zealand Stone Implements. Communicated by J. Edge-Partington.

92

Mr. W. W. Smith, in an article in the *Polynesian Society's Journal*, Vol. VII., p. 244, warns ethnologists of the number of spurious stone implements which are now being sold by dealers and others in New Zealand as genuine relics of Maoridom. The ones he had examined were either of a somewhat dark-coloured limestone, argillite, or greenstone; sawn into size and shape, and afterwards ground smooth on the grindstone. The polishing had evidently been done with very fine emery paper. Apart from this their faces and sides were too flat and too level, and were all too broad at the part where they begin to bevel to the cutting edge, which is too flat, instead of being neatly bevelled.

The writer draws attention to the remark in Evans' *Ancient Stone Implements of Great Britain* upon European forgeries on page 658, "When the demand for an article has exceeded the supply spurious imitations of these have been fabricated, and in some cases successfully passed off upon avid but unwary collectors."

The difficulty of collectors is, I think, also greatly enhanced by the fact that the Maoris themselves purchase these forgeries for sale to tourists.

J. E.-P.

Pacific: Forgeries.

Ling Roth.

Note on the Occurrence of Forgeries in the Pacific. By H. Ling Roth. cf. MAN, 1901—56.

93

The manufacture of forgeries, noted lately in MAN by Mr. Edge Partington, is not by any means a new one. Bérard, who visited Apia in April 1850, after buying some weapons there, writes:—

"We perceived too late that we had fallen amongst people who were smarter at business than we were, for we had paid in fair and square money for clubs and lances

the freshness and the decorations on which showed that they were trade goods for the natives of Apia."—*Campagne de la Corvette L'Alcinière en Oceanie, Paris, 1854.*

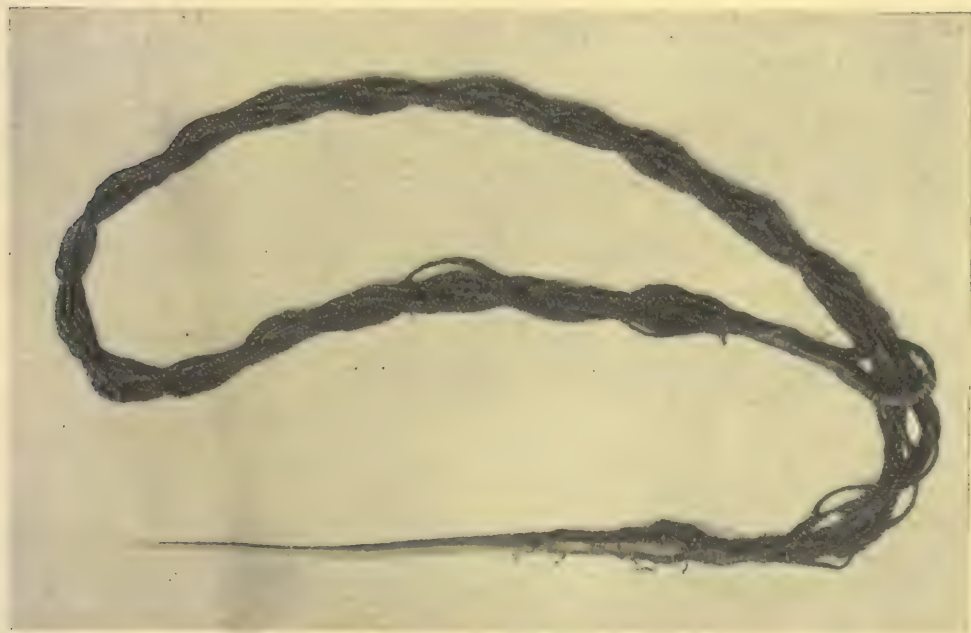
H. LING ROTH.

Australia.

Balfour.

Strangling-cords from the Murray River, Victoria, Australia. Communicated by Henry Balfour, M.A., Curator of the Pitt Rivers Museum, Oxford. 94

Two of these extremely rare instruments have recently been secured for the Pitt Rivers Museum, having formed part of Mr. Norman Hardy's collection. I believe that these are the only specimens in England. Brough Smyth (*Aborig. of Victoria*, 1878, I., p. 351, fig. 169) figures one of them, and gives the native name of *nerum*. He describes it as consisting of a kangaroo-fibula pin, $6\frac{1}{2}$ inches long, attached to a cord made of seven strands, doubled and twisted loosely to form a 14-strand cord, with a loop at one end and the pin at the other. "The aboriginal carrying this noose tracks is "enemy to his *miam*, and having marked the spot where he has gone to sleep, he



"approaches him stealthily, slides the bone under his neck, puts it through the loop, and "quickly draws it tight, so as to prevent him from uttering the slightest sound. He "then throws the body with a jerk over his shoulder, and carries it to some secluded "spot, where he can take, securely and at his ease, the kidney fat." The two specimens to which I now refer were obtained by Mr. John R. Peebles as long ago as 1857 from the Watty-Watty or Litchoo-Litchoo tribes (now extinct) in the neighbourhood of Tyntynder, Murray River, Victoria. The one figured herewith is practically identical with that described by B. Smyth, both in size and structure, the length including the pin is exactly one yard. The other example is somewhat larger, the kangaroo-fibula pin being 8 inches long. In other respects it is similar to the other. Both correspond with B. Smyth's specimen in being made of seven strings of twisted fibre doubled back to form a single loosely-twisted cord of 14-ply. The two sets of seven strings at the end away from the pin are separated for a short distance, so as to form a loop which is neatly "served" with kangaroo sinews, which material is used for the attachment of

the bone pin. The strings are ruddled with red ochre and fat. The Loddon River natives call this instrument *Knarrarm*. H. B.

Torres Straits: Pottery.

Haddon.

Correction.

Mr. Myres' memory has unfortunately played him false with regard to Papuan carbonised pottery (*see* MAN, 1901—78). No pottery is made in Torres Straits. I have exhibited lantern slides at the Anthropological Institute and elsewhere showing the whole process of pottery-making at Port Moresby, including the application of a decoction of mangrove bark to the red-hot pot. This application darkens the pottery, but does not make "black ware" of it. I have given the distribution of pottery manufacture in British New Guinea in the *Journal of the Royal Geographical Society*, October, 1900, page 429. A. C. HADDON.

95

OBITUARY.

Obituary: Peek.

Rudler.

Sir C. E. Peek, Bart., M.A., F.S.A.

By the premature death of Sir Cuthbert Edgar Peek, the Anthropological Institute has had the misfortune to lose a staunch friend whom it could ill spare—one who had ungrudgingly devoted time and thought to the administration of its affairs, and from whom much further assistance might reasonably have been expected. Born on January 30, 1855, he was but little more than 46 years of age at the time of his death.

96

Sir Cuthbert was the only child of the late Sir Henry William Peek, the first baronet—himself a valued member of the Institute—to whose title and estates he succeeded in 1898. Sir Cuthbert was educated at Eton and at Pembroke College, Cambridge, graduating B.A. in 1879. Practical astronomy and surveying he studied under Mr. John Coles, of the Royal Geographical Society; and in 1881 he undertook some journeys in Iceland, accompanied by Mr. Delmar Morgan and Mr. Coles. The results of this exploration were presented to the Geographical Society and to the British Association, and also formed the basis of Mr. Coles's work entitled *Summer Travelling in Iceland*. In 1882 Sir Cuthbert presented to the Geographical Society the sum of 1,000*l.* consols, the interest of which forms the "Cuthbert Peek Prize," awarded for scientific exploration.

Astronomy was a science to which Sir Cuthbert was greatly devoted. In 1894 he established and equipped an excellent observatory on his estate at Rousden, in Devonshire, between Axmouth and Lyme Regis. Assisted in his researches by Mr. C. Grover, he carried out a series of observations on certain variable stars, systematically recording the changes of light, with the view of determining the cause of variability. Sir Cuthbert, in the early part of his career, joined a party of observers in a journey to Queensland for the purpose of studying the transit of Venus. His observations on the geysers of New Zealand made on this occasion and his notes on Maori customs were presented to the British Association in 1883.

It was in 1885 that Sir Cuthbert Peek became a member of the Anthropological Institute, and in 1891 he was elected honorary secretary, a position which he held with much advantage to the Institute for five years. During his secretaryship he introduced great improvements into the administration, devoting himself especially to the development of the library, the collection of ethnological photographs, and the illustration of the journal. In 1894 he started a "vocabulary publication fund," to which he was a

generous contributor. Sir Cuthbert was a judicious collector of objects of ethnological interest, and formed a museum of considerable value. His ideas on the arrangement of museums were submitted to the conference of delegates of corresponding societies at the Oxford Meeting of the British Association in 1894.

Sir Cuthbert Peek married in 1884 the Hon. Augusta Louisa Brodrick, eldest daughter of Viscount Middleton and sister of the Right Hon. St. John Brodrick, the Secretary of State for War.

As will be inferred from this brief notice, Sir Cuthbert was a man of many and varied scientific interests—astronomy, meteorology, archaeology, geography, and anthropology equally claiming his attention—but he was also an excellent man of business. It is sad that his useful and active career should have been brought so early to a close by the attack of an insidious disease to which he succumbed on Saturday, July 6th.

F. W. R.

REVIEWS.

America.

Dellenbaugh.

The North Americans of Yesterday. A Comparative Study of North American Indian Life, Customs, and Products, on the Theory of the Ethnic Unity of the Race. By F. S. Dellenbaugh. Pp. xxvi + 487. With 350 illustrations. New York and London: Putnam, 1901. Price 21s. 97

The mass of literature relating to the redskins, or Amerinds, as our author prefers to call them, is so enormous, that he must needs have a bold heart who attempts to read it all. Mr. Dellenbaugh has not set himself the task of covering the whole of the ground; he aims at making accessible to the general reader the information stored up in the volumes of the Bureau of Ethnology and similar institutions, with the object of stimulating public interest in the collection of material. We have in the book before us a convenient epitome of a great mass of information on the language, arts, and crafts, mode of life, organisation, amusements, and customs of a branch of the human race which was, until 400 years ago, almost as remote from outside influence as if it inhabited the moon; we have, it is true, in *patolli* a game whose Asiatic origin has been vigorously maintained. Mr. Dellenbaugh does not mention this curious coincidence, if it is nothing more, between the games of Asia and Mexico, though he somewhat unnecessarily combats the fantastic theory of a bodily migration of the population of America from Asia within the last thousand years.

He has on some points put forward theories of his own, among others that of the utilitarian origin of cup markings on stones; these he regards as having been intended to point the drill used in firemaking. But inasmuch as they are often only half-an-inch deep, and sometimes three inches broad, the explanation is hardly applicable to the mass of such markings.

The folklore of the Indians receives, perhaps, less than its due share of attention; as the author is also less succinct in this section, the result is, perhaps, a little disappointing, but the theme is one which is naturally less easy to treat at once concisely and clearly. It is unfortunate that no references are given in the text to the pictures illustrating it. One would hardly look on page 369 among customs and ceremonies for an illustration of the mocassins described on page 150.

N. W. T.

New Zealand.

Reeves.

The Long White Cloud. By William Pember Reeves. London: Marshall & Co., 1898. 8vo, pp. xv, 430. Price 6s. 98

The author of this work on New Zealand, who is at present acting as Agent-General in London for that Colony, is well fitted to write of a country which he "has

seen and studied from end to end." Of late years there have been many books written about New Zealand, but few of them are reliable, excepting, of course, official publications, which are of an uninteresting nature to the general reader. Mr. Reeve's object has been to write a history "in which the picturesque side of the story shall not be ignored," and in this he has been eminently successful.

The work opens with a "sketch-history" of the early colonization by Europeans, and of the general geographical features of the country. The writer then proceeds to describe the earlier colonization by the Maories, who, he says, "unquestionably came" from East Polynesia. They are of the same race as the courteous, handsome people "who inhabit the South Sea Islands from Hawaii to Rarotonga—the Rarotongans call themselves 'Maori,' and can understand the New Zealand speech." He quotes Mr. Percy Smith's theory (but without reference) "that the ancestors of the Maori emigrated from the Society Islands and Rarotonga about 500 years ago. It seems likely enough, however, that previous immigrants had gone before them. One remnant of these, the now almost extinct Moriori, colonized the Chatham Islands." The daily life of the Maori is fully described, with accounts of his food and his manner of obtaining it, of his canoe and house building, of his clothing, and of his tattooing; of this last art the author says, "Among the many legends concerning their demi-god *Maui*, a certain story tells how he showed them the way to tattoo by puncturing the muzzle of a dog, whence dogs went with black muzzles as men see them now. For many generations the patterns cut and pricked on the human face and body were faithful imitations of what were believed to be *Maui's* designs. They were composed of straight lines, angles, and cross cuts. Later, the hero *Mataora* taught a more graceful style, which dealt in curves, spirals, volutes, and scroll work. Apart from the legend (a full account of which the author gives on p. 62) it is a matter of reasonable certitude that the Maories brought tattooing with them from Polynesia." Their marking implements and observance in connection with the operation were virtually the same as those of their tropical brothers. The inspiration "of the pattern, whether on wood or skin, may be found in the spirals of sea shells, the tracery on the skin of lizards and the bark of trees, and even, it may be, in the curious fluting and natural scroll work on the tall cliffs of calcareous clay called *papa*."

Of their *Pas* or entrenched villages, and of their mode of warfare, the author gives a full and graphic description; he particularly mentions the throwing of darts and stones by means of the whip stick figured in Vol. XXIX. of the Journal of this Institute. "With the help of these, wooden spears could be thrown more than one hundred yards, and red-hot stones could be hurled over the pallisades among the rush-thatched huts of an assaulted village."

Upon the subject of the decadence of the native race, it is pleasing to find the subject treated from a common-sense standpoint, without sounding the missionary note of the "white man's vices." The author traces this decadence to their partial civilization. "It has ruined the efficacy of their tribal system without replacing it with any equal moral force and industrious stimulus. It has deprived them of the main excitement of their lives—tribal wars—and given them no spur to exertion by way of substitute. Every man was a soldier, and under the perpetual stress of possible war had to be a trained, self-denying athlete. The *pas* were, for defensive reasons, built on the highest, and therefore the healthiest, positions." "The tribes," he says, "still hold land in common, and much of it. They might be very wealthy landlords if they cared to lease their estates on the best terms they could bargain for; they could be rich farmers if they cared to master the science of farming; they might be healthy men and women if they would accept the teachings of sanitary science." The one ray of hope is that lately the Government "has reorganised the native schools, where the children are being taught sanitary lessons; and, better still, the Maori youths are

"awakening to the sad plight of their people." Under the heading of "The Maori and the Unseen," we have the native's idea of the Universe, his mythology, his legends and myths, including that of the great flood and the origin of the human race; and we are told how these myths were handed down from father to son in priestly families by means of sacred colleges. The system of *tapu* and *maru* are fully described, followed by the ceremonies in connection with death and burial.

The early intercourse between native and white man is one long chapter of horrors. By the introduction of the rifle alone "between the years 1818 and 1838 at least a fourth of the race perished." The way to better days, however, was being paved, first by "the whalers, who settled at various points along the coast, chiefly from Cook's Straits southward to Foveaux Straits, and who were engaged in what is known as "shore-whaling"; and secondly, by the missionaries, who "were slowly winning their way through respect to influence in the Northern quarter." It remained, however, for Edward Gibbon Wakefield to lay the foundation stone of the Colony by forcing the Colonial Office to annex New Zealand. "In June 1839 Captain Hobson of the Royal Navy was directed to go to the Bay of Islands, armed with a dormant commission authorising him to annex all or part of New Zealand, and to govern it in the name of Her Majesty, and on January 1840 he stepped on shore at Kororāreka. It is from this point, or rather from the signing of the treaty of Waitangi in May of the same year, that the history of New Zealand as a portion of the British Empire begins." The next fourteen chapters give a complete history of the Colony from this period to the present day.

The work is well illustrated, and the tail pieces are from specimens of native carving. It is a pity, however, that in the illustration facing page 40 so evident a mistake should have been overlooked as calling the stern post of a canoe a "prow," more especially as the author further on in the work figures a stern post from the British Museum collection, but without acknowledgment. On page 43 another clerical error appears, where the author speaks of *mother-of-pearl* shell as being used for decorative purposes, instead of *halotis* shell. These, however, are but unimportant blemishes in a work of very high merit, which can be read with interest alike by the general reader and the anthropologist.

J. E.-P

Siam.

Young.

The Kingdom of the Yellow Robe: Being Sketches of the Domestic and Religious Rites and Ceremonies of the Siamese. By Ernest Young, with illustrations by E. A. Norbury, R.C.A. Westminster: Archibald Constable & Co., 1900 (new ed.) 8vo, pp. xiv + 399. Price 6s. 99

The title of Mr. Young's book is perhaps somewhat misleading. The work does not in reality give any general account of Siam, or of the races inhabiting it. The "City of the Yellow Robe," would have been more applicable, as it is a description, pleasantly and accurately written, of the city of Bangkok and the general everyday life of the Siamese in it, with instructive chapters on their religious ceremonies and their customs and ideas. On these subjects the work is decidedly valuable; Mr. Young had considerable opportunities for observing and recording the ways and thoughts of the people when residing as an officer of the Education Department in Bangkok. The author is not without humour and that kindly appreciation of the light side of life which is necessary to all who would understand life in Indo-China. In a series of chapters the main events in the life of a son of the people are recorded, from his birth to his top-knot cutting, his schooling, his temptations and indulgences, his merit making at the monastery, his marriage, his easy-going manhood largely dependent on an energetic wife who very literally is his better half, until the day when the priests are summoned to

perform the last rites, and the last remaining ashes are placed in the family urns. A chapter is devoted to Buddhism as practised in Siam, and some very cogent remarks occur in a chapter on "The Temples," regarding the extent to which the teachings of Buddha are corrupted and misunderstood among the majority of so-called Buddhists. Cloaked in the Pâli language, which, to the majority of Siamese, conveys just as much as the Latin liturgy of the Roman church does to the majority of its devotees, the grand precepts of Buddha are robbed of that simple directness which constitutes their great charm, with the results which are inevitable among a simple and credulous people. The essentials of the great founder's teachings are too often lost in a maze of traditions and superstitions, or swamped by the remains of the old nat or spirit worship of Indo-China, which is still very much alive in all the races of the great peninsula. Under the heading of "Religious Ceremonies" the author gives an account of many interesting customs, and recounts some of the miraculous stories which are the delight of the Eastern mind. The last two chapters of the book are hardly as well stored with matter as the rest, the chapter on "The Elephants" being especially meagre considering the interest of the subject. Mr. Norbury's wash drawings, with which the book is copiously illustrated, are very charming, and give with great truth the spirit of the scenes about Bangkok. The pen-and-ink drawings may be accused of being a trifle heavy in detail, but are full of life, and add greatly to the interest of the book for the ordinary reader.

H. W. S.

West Africa.

Kingsley.

West African Studies. By Mary H. Kingsley. Second edition. London :
Macmillan, 1901. Pp. xxxii, 507. Price 7s. 6d.

100

Before Miss Kingsley made her fatal voyage to South Africa she arranged for the issue of a fresh edition of the volume which had contained the expression of much of her later thought on West African subjects. The important additions now made practically represent her latest conclusions. They consist of the Hibbert lecture on *African Law and Religion* delivered in 1897; portions of articles in the *Morning Post*, July 1898, on *West African Property*; a lecture on *Imperialism* taking up the points of Mr. Wallace's paper on *The Seamy Side of Imperialism* of June 1899; and her lecture on *Imperialism in West Africa* given in London, February 1900, just before she started. The well-known Oxford lecture was an earnest and striking effort to sketch the fundamental lines of native beliefs and laws, and to show how the two, the spiritual and the practical, are necessarily intertwined; it opened the eyes of many and emphasised the "great human importance of the study of the religion, laws, and social status of the African native." This study was continued in the *Post's* articles (here misplaced as to date), which deal with several tribes but chiefly with the "true negro," a race for which Miss Kingsley had a great admiration. Here should be noted, in connection with recent deplorable attempts in West Africa to gain the "golden stool," the explanation—too short—of "Ancestral property connected with the office of Headmanship, the Stool as the true negroes call it, the Cap as it is called in the wreckage of the kingdom of Kongo." The need for the understanding spirit and the seeing eye in dealing with natives, so strongly insisted on by Miss Kingsley, was never better exemplified than in this instance. Her last discourse in London, imbued with the same principle, is an impassioned plea for governing the West African colonies by an enlightened overlordship which shall recognise the native customs and sense of right and wrong, giving them liberty, justice, and representation in the forms suited to them; above all impressing the sacredness of keeping word and oath, well understood by the "untutored mind." Illustrations of the tribal systems and of secret societies, as well as of the difficulties in getting

true information should render the last pages of this discourse of much interest to anthropologists as to others.

To make room for the new matter, the appendices by the Comte de Cardi and Mr. Harford are left out in the present edition. Mr. George Macmillan writes an introductory notice of the lamented authoress, characterised by taste and feeling, in which he prints a remarkable letter written by her on the way to Cape Town to a native gentleman in Liberia, begging him, on his side, to make known "that there is an African law and an African culture; that the African has institutions and a state form of his own." In her mind the African has also his duties towards the Empire. A good portrait adorns the volume.

L. T. S.

Africa: Ashanti.

Freeman.

Travels and Life in Ashanti and Jaman. By R. Austin Freeman. Westminster: Arch. Constable & Co., 1898. Pp. 551, about 100 illustrations, and 2 maps. Price 21s. 101

This book should be widely read at the present time, when recent events in Ashanti are fresh in the memory. It has, however, a more permanent value, as the author, Dr. Freeman, has given, with considerable success, an account of the country, the life, the dress and personal ornaments of the people, and has followed this by a *resumé* of the historical facts connected with Ashanti, and the results of British policy there. There is a good chapter on the subject of malaria, and finally one on the commercial possibilities of the country.

The interest of the book to anthropologists is, that the opportunity to study the interesting and remarkable people has almost completely passed, owing to the abolition of native rule. "Henceforward their religious rites will be performed in secret, and their laws administered secretly or replaced by those of the white man, while the distinctive arts of the country hitherto mainly fostered by the magnificence of the court, and the love of gorgeous display on the part of the royal personages and chiefs, finding no occasion for their exercise, must inevitably die out."

We do not possess much literature on the subject of Ashanti, Bowdich (1819) and Colonel A. B. Ellis being practically the only two writers who have done justice to the subject.

The work is profusely and well illustrated by drawings made by the author, and from photographs, which are excellently reproduced.

This book needs careful reading, because a great deal of interesting anthropological detail is scattered throughout its pages, incorporated in the account of the journeys and the various palavers in which the author was engaged; hence, unless care is taken much that is of value is apt to be missed.

In describing Kumassi, Dr. Freeman says, that amongst the numerous objects of interest there were none that made a greater impression upon him or seemed more significant than the sculptures with which most of the better class houses were adorned. The hut which he occupied presented varieties of every example of architectural ornament met with in the town. These sculptures may be divided into three classes, first, simple incised pattern on flat surfaces; second, designs in low relief; third, perforated designs on fretwork. The incised ornaments were not numerous, generally simple in character and executed in red clay; the raised designs were more elaborate, some indeed extremely intricate, and were used in two ways. Executed in red clay and in comparatively simple forms, they were used to enrich the fronts of the bases of houses, the lower members of walls, or the dies of pilasters. In more complex forms they were employed in panels in the middle members of walls, in friezes, in interior dados, and in tympana or gable ends. The third variety, the perforated or fretted ornaments, were

almost exclusively used in one form of house construction. In the better class of houses, the front, instead of being entirely open, was closed at each end, by this latticework, of very elegant design, the central part only being open. In some cases the central opening was quite narrow, forming merely a doorway of ordinary width, while in others a comparatively small space at each end was thus closed in, the greater part of the house remaining open in front. The most common motives in these designs were, 1, the spiral or volute; 2, a kidney-like form derived from the volute; 3, the circle (rather rare); 4, the zigzag; 5, a form somewhat like the stone arrow-head, so commonly used as an ornament by the Hausas, Soudanese, and Arabs; and various rectangular and other forms, which the author was not able to classify. These various ornaments are well illustrated in the text.

Though not dealing with the subject of fetish with the same detail as the late Miss Kingsley, Dr. Freeman has some interesting information on this subject, as also upon the music, the salutations and the dances of the people; and the dress, too, and manners and customs, and method of life are all sufficiently elucidated.

A few of the people's folk-stories are given, as, for instance, "The Crow and the Vulture" (p. 284).

On p. 331 there is a very interesting illustration of a "Saffi" or charm, written for the author by the Almani of Boutuku, to ensure safe return to the coast and subsequent good fortune. It is very like the charms used in the Egyptian Soudan and on the East Coast, as well as, we believe, in Arabia.

Dr. Freeman says there seems to be a general agreement among all nations, civilised and barbarous, that the human body, as turned out by nature, is a crude, unfinished production, distinctly lacking in ornamental qualities, and requiring certain artificial touches to bring it up to the required standard of beauty. For this reason, in Africa tattooing is in vogue, and the people make use of three kinds of markings. First, true tattoo marks; second, plain incisions into the skin; third, raised cicatrices. The first of these is very rare, however.

It is interesting to notice that amongst the Ang-laws it is customary to distinguish certain members of the family by characteristic face marks—the elder of twins, for instance, being distinguished by an oblique line passing downwards from the ala of the nose. And amongst the Gruinsi the slaves have as a mark a series of three broad lines radiating from the outer angle of each eye in addition to the ordinary three lines on the face, which are almost universal in Central Africa.

There are some very interesting remarks with regard to names. For instance, any remarkable circumstance connected with a child's birth will be commemorated by an added name; twins receive additional names setting forth the peculiarity of their birth and differentiating them into male and female, elder and younger; a posthumous child is distinguished by the added name, Doku. As the child grows up, some personal peculiarity may give rise to an added name, or a name may be given to indicate the social status, as "Koffi Donkor," meaning Kofi the foreign slave (in this case the "Koffi" would commemorate the day of purchase, not the day of birth). Then names occur very commonly which can be regarded only as nicknames, although they become after a time the recognised names of the persons to whom they are given. Among Hausas and other foreigners in the Gold Coast territories the names generally indicate the place of birth; as, for example, Yusufu Dandaura (Yusuf or Joseph of Daura-Da-n-Daura, meaning a son or native of Daura), &c.

These remarks must suffice to show the interesting nature of this volume.

We are glad to notice that the human sacrifices are thought to be greatly exaggerated, the author remarking that every skull seen was put down to "a sacrifice," as also all legal executions.

R. W. F.

Anthropology.**Schurtz.**

Urgeschichte der Kultur. By Dr. H. Schurtz. Pp. xiv, 658, with 23 pl. and 434 blocks in the text. Leipzig: Bibliographisches Institut, 1900. Price 18s.

102

Dr. Schurtz has written a work which is worthy of his reputation. His history of civilisation supplies a distinct want; it deals with the origin of trade and industry, with primitive art, sociology, religion, and science, and with the causes of national progress and decline. It is clear that no man can cover this ground single-handed. Dr. Schurtz has been amazingly industrious; his work is in no sense a compilation; but he would be the first to admit that he has had to rely on the results attained by others in many parts of the field covered by the book. Unfortunately he has given us no references and no list of authorities; we are therefore often in the dark as to the authorship of a theory or a statement and the foundation on which it stands. Where, as in the discussion on the origin of marriage, Dr. Schurtz mentions his authority—E. Westermarck—the importance of whose criticism of Morgan's theories he has over-rated, the reader can form an opinion for himself without much difficulty. Where the theory, as often happens, takes the form of an apodeictic assertion, the general reader, to whom the book will also appeal, cannot pursue the subject if he will, and cannot tell how far there is authority for the views expressed. Both a good classified bibliography and a fair number of references should be added in a future edition.

These errors of judgment are, so to speak, external. It is of more importance that there is a certain lack of clearness in the treatment, or perhaps, we should say, an absence of definitions. We read, for example, on p. 556, that fetichism is, properly speaking, the worship of a chance object. Fetichism is a term actually used in more than one sense; it may, indeed, be doubted whether the primitive savage ever does worship a chance object without regarding it as the abode of a spirit, but it is often understood to mean this; further, fetichism, as Schurtz says, is by no means the same everywhere. It is therefore quite clear that, for the general reader at any rate, the term should be clearly explained, even if, which is very desirable, its use is not, in the interests of mutual intelligibility, restricted to one class of religious phenomena. These are, however, small points. On the whole Dr. Schurtz's book may be commended unreservedly; not only will it interest the general reader and give him an insight into problems that have so far not presented themselves to his mind, it will be a welcome addition to the library of the anthropologist. Some portions of the book, which deal with fields in which Dr. Schurtz has specialized, are naturally more authoritative than others. But even in dealing with those subjects which he has not specially made his own, Dr. Schurtz has been able to avoid the pitfalls which beset the way.

England is far behind other countries in works of this sort; perhaps that is why anthropology is not yet regarded by the Government as a branch of investigation that should receive support from the national exchequer. A work of this kind in English might do much to raise anthropology to its proper place in this country. N. W. T.

Pacific.**Brigham.**

An Index to the Islands of the Pacific Ocean. By W. T. Brigham, A.M. Honolulu, 1900. 4to., 170 pp. and 24 maps.

103

This new publication of the Director of the Bernice Pauahi Bishop Museum at Honolulu is described as a handbook to the chart upon the walls of the museum, but its utility will assuredly not be confined within such narrow bounds. It is intended to assist those who are engaged in the study of Pacific ethnology to locate with precision the multitudinous groups of islands and atolls which the ordinary atlas cannot attempt

to register. When it is mentioned that the index contains considerably more than 3,000 names, it will be seen that the author's task has been by no means a light one. Findlay's valuable Directories of the North and South Pacific cover the same ground and more, but they are expensive and primarily written for the use of navigators. It thus often happens that they give much information which those who consult them for purely ethnographical purposes do not require, and their charts are unnecessarily elaborate for purposes of speedy reference. The simplicity of Professor Brigham's maps is one of the many advantages of the Index, for the eye is not wearied by a mass of finely printed names obscuring the one or two which form the object of one's search. All the maps have been compiled from the best available material, Admiralty charts, &c., but finality has naturally not been attempted, for until exact surveys of the whole region have been completed the positions of many islands cannot be given with certainty. The author makes a wise protest against the notion that publication of useful matter should be constantly deferred in the hope of achieving perfect knowledge; were such a system adopted, progress would, as he truly says, be indefinitely delayed. The orthography of native names is a perpetual source of difficulty, and it is here perhaps that students of language might be most inclined to join issue with Professor Brigham. But here again we may suppose that perfection is not attainable, and the modesty with which possible shortcomings in orthography are discounted in the preface must do much to disarm criticism. It will probably be unanimously conceded that the author has taken the only satisfactory course with regard to nomenclature, in reverting to native names wherever such can be proved to exist, and in their default adopting the name given by the first discoverer. If we are not mistaken this is the principle for which Dr. Von Luschan, of Berlin, has always so strenuously contended; and with its general adoption, names like "Sandwich Islands" and "New Mecklenburg" must disappear from the map in favour of Hawaii and New Ireland.

The information in the index is confined to essential facts, and its character will be best understood from an example taken at random:—

HUAHEINE, easternmost of the Leeward group of the Society Islands, discovered by Cook, July 1769; 20 miles in circumference, divided at high water into Huaheine nui and Huaheine iti. Population, 1,100. $16^{\circ} 42' 30''$ S., $159^{\circ} 01' 15''$ W. 20.

Here the reader may look under the heading *Society Islands* for the general history of the group, and at Map 20 for the actual position of the Island. As an example of the thoroughness with which the author copes with difficulties of pronunciation, another example, also taken at random, may be quoted. For the general reader the island spelt *Cicia* but pronounced *Thithia* is likely to prove a source of confusion; the cross-reference is duly given, so that the difficulty, probably created in the first instance by missionaries, is at once obviated.

The Introduction, of some 30 pages, provides a short history of Pacific discovery from the early 16th century onwards, with some important remarks on oceanography, on flora and fauna, ethnology, the whaling industry, missions in their relation to the native races, cannibalism, religion, language, and on the partition of the Pacific by the Powers, the whole intended to give the general reader a concise notion of the physical constitution and the occupants of the vast region with which the index deals. At the end of most sections is a short bibliography, making it easy for those who wish to do so to pursue their studies further. It should be added that throughout the bounds of the Pacific are taken to be on the north 30° N., on the east 105° W., on the south 55° S., on the west 130° E.; the reasons for this definition will be found in the preface. To those, and they are many, who read much in books of voyages and travels Professor Brigham's work will be a veritable godsend. Even the laziest reader can now, without consulting heavy atlases and cumbrous books of reference, find out his bearings and

realise exactly where he is. Deficiencies there may be in these useful pages, but it must be remembered that the book is professedly only a primer: as the author remarks, the primer must come before the reader, and if it clears the path by giving ground for just criticism it will not have been offered in vain. By its various publications, of which the present is a worthy example, the Bishop Museum is establishing a claim on the gratitude of all students of the ethnology of the Pacific Islands.

O. M. D.

Folklore: Scotland.

Campbell.

Superstitions of the Highlands and Islands of Scotland; collected entirely from Oral Sources. By John Gregorson Campbell, Minister of Tiree. **104**
Glasgow: MacLehose & Sons, 1900. 8vo, pp. 318. Presented by the Publishers.

In this work is published the first instalment of the materials collected by the late Minister of Tiree, after whose death the book was entrusted to an editor, who remains anonymous. This is not in itself an objection, but it would have been well to inform the reader whether the work is published as Mr. Campbell left it, and, if not, how far the responsibility of the editor extends. If, in the absence of any definite statement, we may assume the former, we can only regret that Mr. Campbell did not, in the case of the tales, give more precise details as to sources; it would have been advisable also to localise them and the superstitions more accurately than has been done by the author, who remarks: "The beliefs of one district do not differ essentially from those of another." Even were this true, the local variations of custom are always important.

The greater part of this volume is devoted to fairies and similar beings, but the term fairy is understood in a wider sense; the *sithcheam* are of all sizes, from dwarf to giant; so far from being beautiful they frequently have some personal defect; the whirlwind, commonly regarded as the witch's chariot, is here "the people's puff of wind"; and like witches in other countries they are kept at bay by strong odours. Somewhat curiously handmills are protected from them by being turned *deiseal*, sunwise; elsewhere the left turn is commoner in countercharms.

Among animal superstitions we read of the king otter, who is not, however, all white, as is usually the case; the one white spot is the only vulnerable one. In Sutherland the otter king is stated to be white (*Folklore*: I. vi, 249) and this agrees with the belief found far outside the limits of Europe that the king of a species is white. The white animal is the favoured victim over a wide area. Serpents and clock-beetles are mercilessly killed; the dungbeetle, as in Scandinavia and Germany, is spared; in Scotland there is nothing recorded to connect it with the cult of Thor.

Of the many other interesting facts the following are specimens:—In a boat, objects are not to be called by the same names as on shore; in Skye fires lighted on headlands at the beginning of winter are believed to attract the herrings, just as the fires of November 5th at Hastings; meeting "plain soled" people is unlucky; we find swan-maidens and seal-people; the raven's nest contains a magic stone; and menstrual blood is a prophylactic against the evil eye. The more collections of this sort we get the better will be the verdict of all who read this interesting book; and those who look at the question more from the scientific point of view will echo the wish.

N. W. T.

PROCEEDINGS OF SOCIETIES.

Proceedings.

Soc. d'Anthr. de Paris.

Sommaire des Procès-verbaux de la Séance du 20 juin 1901.

105

La Société accepte le principe d'une conférence internationale pour établir une bibliographie anthropologique à la condition que cette bibliographie soit indépendante de toute autre publication.

M. Thiot présente des objets provenant d'une station préhistorique de l'époque tardenoisienne à Warluis (Oise). Discussion : MM. Atgier, Taté, Thieullen.

M. le Dr. F. Regnault fait une communication sur le femur ; empreinte iliaque, angle du col.

M. le Marquis de Cacqueray de Lorme présente des photographies et des pièces de la Nouvelle Guinée anglaise. Discussion : MM. Taté, Atgier, Thieullen, Sanson, d'Echérac, Zaborowski, Verneau, Lejeune.

M. Paul-Boncour fait une communication sur des modifications squelettiques des os longs du membre supérieur dans l'hémiplégie infantile. Discussion : MM. Manouvrier, Regnault.

M. Fouju : Découverte d'une sépulture néolithique à Presles (Seine et Oise) avec gisement de silex aux alentours.

Sommaire des Procès-verbaux de la Séance du 4 juillet 1901.

Présentations.—M. A. de Mortillet : Objets tertiaires du Cantal.

M. Laville : Vase canaque et silex taillés des environs de Beauvais.

M. P. de Mortillet : Dent d'éléphant et coup de poing chelléen du Vésinet. Discussion : M. A. de Mortillet.

M. Zaborowski : Portraits de femmes de la Vendée des Deux-Sèvres et de la Vienne. Discussion : MM. A. de Mortillet et Sébillot.

Communications.—Mme. Alexandra Myrial : Les Mantras aux Indes. Discussion : MM. Garnault, Atgier, Zaborowski, Regnault. Mme. Myrial.

M. Yves Guyot : Sur les Vaalpens, race aborigène de l'Afrique du Sud. Discussion : MM. Verneau, Zaborowski.

M. R. H. Mathews : Organisation des tribus aborigènes de l'Australie.

M. Pommerol : La fête des brandous et le dieu Grannus.

Proceedings.

Anthropological Institute.

Summer Excursion, June 22, 1901. At the invitation of Mr. and Mrs. Edge-Partington the Institute visited Park Hall, Great Bardfield, to study Mr. Edge-Partington's ethnographical collections. After lunch the president proposed a hearty vote of thanks to Mr. and Mrs. Edge-Partington for their hospitality, which was carried by acclamation. The party then proceeded to inspect the collections under the guidance of Mr. Edge-Partington, who called attention to the various points of interest.

106

Extraordinary Meeting, June 25, 1901. Prof. A. C. Haddon, F.R.S., president in the chair.

Dr. W. H. R. Rivers read a paper, illustrated by lantern slides, on "The Colour Sense of the Natives of Upper Egypt." The paper was discussed by Prof. Sully, Miss Pengelly, and Messrs. MacDougall, Edridge Green, C. S. Myers, and W. H. Winch.

A paper by Mr. Basil Thompson on "The Natives of Savage Island" was taken as read.

A vote of thanks was passed to Dr. Rivers for his paper.

Correction—MAN, 1901—90, line 11 from bottom, read "collected by Miss Owen and presented by her . . ." Line 6, for "Ynao" read "Inao."



STATUETTE OF A NEGRESS.

ORIGINAL ARTICLES.

Egypt.

With Plate I-J.

Petrie.

An Egyptian Ebony Statuette of a Negress. By W. M. Flinders Petrie, 107
 Edwards Professor of Egyptology at University College.

The ability of the Egyptians in expressing the characteristics of a race is well known, and it has never been better shown than in this statuette. The figure is carved in ebony and highly polished; it is of the size here shown. The original motive is that the girl has before her a monkey walking upright with a tray on its head; the marks of the edge of the tray are seen on the breasts and *sternum*; the hands of the girl were occupied in steadying the tray. The figure of the monkey is, however, by an inferior hand, and it is, therefore, omitted here in order to show the girl's figure better.

The race is that of the negroes of the upper Nile, who were brought into Egypt in large numbers as slaves, especially in the time of the Eighteenth Dynasty, to which this figure certainly belongs. The same small tufts of hair are shown on negro children in the well-known group figured in Wilkinson's *Manners and Customs*, fig. 88.

The prognathism of the profile is not at all exaggerated, and the good modelling of the jaw and lips is noticeable. The expression is admirably given; the intent careful air, looking down at the tray which is being carried; the complete childish innocence, and absence of self consciousness. The perfect treatment of the under side of the jaw, its junction with the neck, and the pose of the head, are points which show a fine artist. The ears are pierced in the lower lobes.

The shoulders and the hips are excellently modelled; the rounding of the muscles of the back, firm and full, can scarcely be appreciated in the side view. In the lower limbs the rendering of the action is very lifelike; the left leg is firm and supporting, the right is being slowly raised at the heel for the gentle forward movement of guiding the monkey in front. The balance of the whole figure leaves nothing to be desired.

In comparison with the other statuettes made by Egyptians, now at Bologna, Florence, and elsewhere, this is by far the best; to the present, this stands as the finest piece of Egyptian sculpture on a small scale. It was found at Thebes about 1896, was sold by Ali Arabi at Cairo, and is now preserved at University College, London.

W. M. FLINDERS PETRIE.

Bibliography.

Thomas.

Suggestions for an International Bibliography of Anthropology. By N. W. 108
 Thomas, M.A.

It has often been pointed out that the second discovery of a fact is sometimes less easy than the first. In the absence of an adequate bibliography, the specialist has to ransack an enormous mass of literature in order to discover what facts bearing on his subject have already been recorded. It lies in the nature of things that the anthropologist suffers more from this cause than other scientific workers; information with regard to beliefs and customs is easily gathered, and the last thing which enters the non-anthropological mind is the idea that such information is of value to the anthropologist and should be put at his disposal. It is too often dumped down in the most inaccessible places, and chance alone brings it to light again.

Many partial bibliographies exist; most anthropological societies make the attempt to keep their members more or less informed of new discoveries. But by a very natural limitation the smaller articles either escape notice or are not considered worth noticing, with the result that they seldom or never reach the anthropological world at large; they have at most a circulation in their country of origin. As I recently pointed out in *Globus* (LXXX, p. 37), even the bibliography of the *Archiv für Anthropologie*, which is in many respects a model, is extraordinarily incomplete when one looks into the details.

In a recent volume English folklore was represented by six items ! If this is the case with the *Archiv*, which takes years in preparation, it is *à fortiori* true of other bibliographies. The mass of anthropological matter in periodical and other literature is so large that the horizon of the bibliographer does not extend much beyond the limits of his own country, even if—which is not always the case—it includes all home publications.

It might be possible for a single society to produce a fairly complete bibliography. The work must, however, inevitably have its commercial side. I venture to think that no society and no publishing firm would care to embark single-handed on an undertaking which would involve the assistance of paid contributors in most, if not all, civilized countries. If they did, business considerations would necessarily in the long run have an influence on the completeness of such a bibliography.

The question is essentially one for the anthropological world at large. A far more practical, and at the same time more logical, procedure would be for the anthropological societies to combine to produce an annual bibliography. In each country a society or combination of societies would make itself responsible for the publications, periodical and otherwise, of that country. The local sub-editors would prepare slips for each book or article ; these would contain all the usual bibliographical details, and, in addition, a *resumé* or list of the contents, which would be as short as possible consistently with clearness. These slips would be sent to the editor of the bibliography from time to time, whose business it would be to secure uniformity, and to arrange the slips on a system to be described later. It would, of course, be possible for a society to make the editor-in-chief responsible for the slips, either in whole or in part. No doubt the authors themselves would in course of time undertake the preparation of slips for their works, and in this way relieve the contributors to the bibliography. Then, too, the short notices which appear in the *American Anthropologist* and other journals might readily be adapted for the bibliography, especially if the compilers bear in mind the use to which they will be put.

There will probably be little difference of opinion as to the ground which the proposed bibliography should cover. The International Catalogue of Scientific Literature provides for Somatology, Physiology, Psychology, Geology, &c., and, though it may be necessary to include a few headings in these subjects which have no place in the International Catalogue, it will clearly be unnecessary to cover the ground again ; the mere fact that one volume would probably not suffice for the whole bibliography, if these branches of anthropology were included, is a sufficient reason against entering into competition at present with the International Catalogue. It is unnecessary to speculate as to what steps may be advisable at a later period when the question of the revision of the schedule of the International Catalogue becomes a burning one.

The subjects to be dealt with would therefore be as follows :—

1. GENERAL : Methodology, Bibliography, Biography, &c.
2. SOMATOLOGY (supplementary to the International Catalogue, if necessary).
3. ETHNOLOGY, including Sociology, Technology, Linguistics, Primitive Religion, and Folklore.
4. ETHNOGRAPHY, including Origin and Relationship of Races and People, Migrations, Anthro-Geography, &c.
5. PREHISTORIC ARCHAEOLOGY.

This scheme, propounded by Dr. Brinton, will probably be found in practice to have the balance of convenience on its side. Questions will, of course, arise as to subdivisions ; the section of Religion and Folklore presents great difficulties as soon as one endeavours to evolve a satisfactory system of classification. Many items, too, in the division of Prehistoric Archaeology might also be classified under Technology and other headings. Questions of this sort, however, may be left for detailed discussion at an

international conference; even should a compromise between contending parties prove unattainable, the differences that will arise are unlikely to wreck the bibliography. For, provided that the system of classification adopted be sufficiently simple, and that changes in the system are not made at too frequent intervals, it will be found that the practical difference between widely different schemes is not large. It will be noticed that no provision is made in the above scheme for descriptions of individual races and peoples. Such a description will, of course, include items falling under many sections of the schedule, of which the main heads have been given above; it is, therefore, of a general character, and cannot properly be included in the schedule. It will be simpler to meet the case by adopting a primary geographical classification, with a supplementary alphabetical list of general articles. In theory, perhaps, an ethnical classification is better, but a geographical arrangement may without much difficulty be made on the somewhat indefinite lines of the International Catalogue, and uniformity in this direction should certainly be kept in view.

Each title should be distinguished by a reference number by which it would be designated in the classificatory second part. It would probably be well, as already suggested, to add a brief table of contents, at any rate of those works where anthropological data are only sparsely scattered. To provide against errors of classification it would be well if the preparation of these tables of contents were made a part of the work of the editor-in-chief; if they were compiled by the sub-editors there would be almost inevitably a certain lack of uniformity. To provide a basis for this table of contents it would be the duty of the sub-editors to prepare for the use of the editor-in-chief extremely brief notes: these might be written either on the title slip, or better, on separate slips which would be tied to the title slip and might afterwards become the basis of a slip-catalogue. The editor-in-chief would classify all the slips under the proper subheadings of the schedule, and these subheadings would alone appear in the bibliography.

The form of the first part of the bibliography would therefore be somewhat as follows:—

[AFRICA.]

[Bantu.]

1205. Wiese, C., *Beiträge zur Geschichte der Zulus im Norden der Zambesi, namentlich der Angoni.*

Ztschr. f. Ethn., XXXII., 181-202. Witchcraft, Initiation Ceremony (girls), Marriage, Gods, Cult of Ancestors, Future Life (in animal form), Divination, &c.

Reference to reviews and the more important notices would follow.

In the second part, the main divisions of which, cited above, would be divided and subdivided again, these entries would reappear in the following form:—

[RELIGION.]

Cult of Ancestors.

Africa (Zulus), 1205.

This would mean that the title of a work which included information on the cult of ancestors among the Zulus would be found on turning to No. 1205 in the first part.

The arrangement of the first part being geographical, it will be necessary to have an index of authors and an index of tribes; the latter should be amply cross-referenced to obviate the difficulties which might arise from the unsettled nomenclature and make it sometimes not too easy to identify the tribe to which a foreign author refers. To facilitate reference to the classificatory portion, an index of headings and subheadings will be necessary; this index also should be freely supplied with cross-references.

It is hardly necessary to point out the value of a bibliography such as the one here outlined. At present, as I have pointed out, many items never come within the bibliographer's net; by international co-operation a far greater degree of completeness

would certainly be obtained. At present, even in the bibliography of the *Archiv*, classification is as good as non-existent ; if there is any indication of the contents (beyond the name of the tribe), the absence of an index renders it impossible to find the required references except by reading through the whole bibliography. The proposed scheme would obviate any difficulty of this sort. An international scheme would probably have another advantageous result ; at present the terminology of anthropology is in a very unsettled state, at any rate as regards the main divisions of the subject. In Dr. Brinton's classification ethnology has no necessary connection with questions of race, and is concerned entirely with technology and "Völkerpsychologie." Professor Keane's *Ethnology*, on the other hand, is occupied with racial questions, and concerns itself with what Dr. Brinton terms ethnology, only in so far as it throws light on origins. An authoritative pronouncement by an international conference would probably go far to settle the meaning to be given in future to these and other terms.

At present the specialist is dependent partly on the efforts of his predecessors, partly on his own efforts for a bibliography of his subject. It may easily happen that two authors laboriously work over the same enormous mass of literature, for want of a bibliography, in order to collect their facts ; the anthropologist is content to leave these matters to chance ; no attempt is made by united effort to make readily available for our own and for future generations the enormous mass of material that is being collected year by year. We flatter ourselves that Anthropology has put off its swaddling clothes, but we act as if collection of facts alone were all that is needed for the advancement of the Science of Man. In our days, when the savage is disappearing before the schoolmaster, the gin bottle, and the missionary, collection is more important than analysis, provided that nothing be passed over ; the main value of hypotheses lies in directing attention to facts which might be overlooked until it is too late. But with the collection of facts must go, hand-in-hand, a classification and pigeon-holing of them which will permit them to be found when wanted. This last is the function of a bibliography. If the anthropological world has the real interests of anthropology at heart it will not permit the cost of such an undertaking to deter it.

The question of ways and means is undoubtedly a serious one if the whole financial responsibility falls upon the societies ; this is more especially the case in those countries which, like England, are not yet sufficiently enlightened to understand that anthropology is worthy of support from a practical, no less than a scientific point of view, and can throw unexpected light on the problems that present themselves to the civil servant who is brought in contact with native races.

It may be possible to come to an arrangement with a publisher ; the details of such an arrangement cannot be profitably discussed here. If this is impracticable it will be necessary for the societies to subscribe or guarantee a certain amount, receiving in return free copies, or copies at a reduced rate. In either case a portion of the edition might be put on the market in the ordinary way and the receipts would be available for reducing the liability of the societies.

All societies expend a considerable part of their income on their publications ; if it is impossible to meet the expense in any other way it is a matter for serious consideration whether a certain portion of this expenditure might not more profitably be devoted to the preparation of an annual bibliography. At present the work of collection is most important ; classification takes the second place ; the building up of theories may be left, if necessary, for future generations.

There is another question which the anthropological world would do well to consider. The proposed bibliography will lighten the burden of the individual student in the future. For the past we have practically no general bibliographies which go back more than thirty years ; those which have appeared are incomplete, and in the absence of subject classification and indication of contents, they are little more than

lists of works which the specialist must consult. A complete bibliography of anthropology would be an enormous undertaking, but that is no reason why a beginning should not be made. This is hardly the place to discuss the question at length; it would probably be simplest for each country to undertake its own literature and deal with it on the same lines as the annual bibliography. An alternative scheme would be the appointment of editors for different geographical areas who would receive from the different countries slips for those books only which contained information with regard to their special area. In England the Folklore Society is contemplating the publication of a general bibliography of English Folklore. If this is not to be limited to the folklore of the British Isles, it is a matter for serious consideration whether an effort should not be made to expand it so as to cover linguistics and technology at least. The Folklore Society has in its museum objects which have no connection with religion or folklore, as folklore is defined in England; if bows and arrows and beadwork find a place in their museum, it is illogical to exclude from the bibliography the heading of technology; what is folklore in a museum is folklore in a book. N. W. THOMAS.

Africa : Tunis.

Myres.

A Piece of Early Masonry at Chaouach in Tunis. By John L. Myres, M.A., F.S.A.

109

The native village of Chaouach lies on a bold spur of the moors which overhang the north side of the broad valley of the Mejerda river (anc. *Bagradas*), about 75 km. from its mouth, and about 60 from the town of Tunis. The nearest railway station, Medjez-el-Bab, is about 5 km. away from the village. Immediately below the modern village lie the ruins of the small Roman town of Sua, the name of which probably represents the same native word as Chaouach; on the edge of the moors immediately to the north-east lie the remains of innumerable chambered tumuli which have been described already by M. Bertholon (*Bull. de la Soc. d'Anthr. de Lyon*, VII. (1888) p. 78. Cf. *Exploration Anthropologique de Khoumirie*,



in *Bulletin de Geographie historique et descriptive*, 1891, esp. figs. 16 and 17); and in the cliffs which bound the valley, close below them, are a number of small rock-cut tombs which have also been described before (*Bull. de Geogr.*, 1891, i.e. fig. 18), and which resemble closely both the *tombe a fenestra* of Sicily, and the primitive rock tombs of the Bengemma hills in Malta (cf. MAN 1901, 71).

Both the Roman site, and the two sets of prehistoric tombs, have been sufficiently described elsewhere; but it is curious that no previous traveller appears to have noted the remarkable piece of masonry which is represented in the photograph, and which, when observed in 1897 by Mr. A. J. Evans and myself, proved to be unrecorded among the then known monuments of Tunis. The wall stands on the north edge of the village, nearly at the summit of the spur above-mentioned, and facing northwards on to the

neck which joins it with the moorland. The section which is exposed to view stands some two metres above ground, and is surmounted by a modern housewall of smaller and ruder stones. The joints along which small clinging plants appear, in the photograph, marks the upper margin of the old masonry.

The style of the masonry is peculiar, and is in complete contrast both with the unhewn stones of the prehistoric tumuli, and with the regular isodomous masonry of the Roman site below the hill. If one had met with such a wall in Sicily, in South Italy, or in Greece, one would have said without hesitation that it was Greek work of the sixth century B.C. But how does such work come here, in the heart of Carthaginian Africa? A further difficulty arises from the fact that the very few fragments of genuine Punic masonry which survive at Carthage itself, namely the sixth century tombs excavated by Père Delattre on the south side of the Byrsa (*Les Tombeaux Puniques de Carthage*, Lyon, 1890 : *Necropole Punique de la Colline de St. Louis*, Extrait des *Missions Catholiques*, Lyon, 1896), do not by any means conform to the style of the wall at Chaouach; they are much more regularly isodomous, and there are few great blocks of the kind which are so marked a feature here. The conclusion, however, seems inevitable that this piece of wall must be assigned to the earlier half of the Carthaginian domination; and if so, the style of the masonry is only one piece of evidence the more in support of the impression which is so strongly conveyed by the contents of the Carthaginian tombs already mentioned; namely, that in the sixth century B.C. the material civilisation of Carthage was already in great measure dominated by the higher art and industry of her Hellenic rivals. J. L. MYRES.

Pacific: Tonga.

Thomson.

A Stone Celt from Tonga. By Basil Thomson, lately H.M. Special Commissioner to Tonga.

110

At the close of my recent mission to Tonga, which resulted in a British Protectorate over the group, I received two presents: the first was a piece of red, hand-made woollen cloth, sent by the King of Tonga as a gift to Her Majesty, the late Queen, which had been given to his ancestor by Captain Cook in 1777, and which is now in the royal collection at Windsor Castle; the other was the stone celt, which I send for the inspection of members of the Institute. This was presented to me by Fatafehi, the king's father and the Tongan plenipotentiary, who said that, as he knew that I prized things of the ancient time, he wished to signalize the signing of the treaty by giving me something that had been preserved for generations in his family—that of the sacred



STONE CELT FROM TONGA. SIDE VIEW: HALF SCALE.



STONE CELT FROM TONGA. EDGE VIEW : HALF SCALE.

line of kings (Tu'i Tonga). The celt measures $9\frac{1}{2}$ inches long by $3\frac{3}{8}$ inches wide in its broadest part; it is made of an olive-green stone full of grey longitudinal veins, and beautifully polished. One is struck at once by its departure from the usual shape of Tongan celts (which are wedge-shaped, angular, and roughly made), as well as by the stone itself, which is of a kind not found in Tonga. It was obvious that it has been brought from another island, but all that Fatafehi could tell me about it was that it had been handed down for many generations as an heirloom in his family. On my return to England I showed it to Sir William Macgregor, who declared that without a shadow of doubt it had come from Woodlark Island at the north-east end of New Guinea, where he had himself discovered the quarry from which alone this peculiar veined stone is procured. It has, moreover, the shape and finish of the New Guinea celt. We have, therefore, the problem of a New Guinea implement in the possession of the Tongans. If Fatafehi was mistaken in the time during which the stone had been in Tonga the solution would be simple, for the whalers and sandalwooders made Tonga a port of call. But there were neither whalers nor traders before 1790, and if the stone had been brought to Tonga by Tasman or Cook or d'Entrecasteaux, I think that its origin would be remembered. Fatafehi, at all events, was positive that it had been in his family for more than a century. As evidence of the migration of the Polynesians from the westward it must be taken for what it is worth.

Totemism : South Africa.

Frazer.

South African Totemism. By J. G. Frazer, M.A., Litt.D., D.C.L.

In the seventh volume of his series of *Records of South-Eastern Africa*, 111 published this year, the indefatigable historian Mr. G. McCall Theal has included a valuable summary of information on the Bantu tribes of South Africa. As the passage in which he describes the totemic system of the tribes not only throws new light on that system, but appears to have an important bearing on recent discussions as to the origin of totemism, readers of MAN may be glad to have it reprinted here. It runs as follows :—

“The Bantu believed that the spirits of the dead visited their friends and descendants in the form of animals. Each tribe regarded some particular animal as the one selected by the ghosts of its kindred, and therefore looked upon it as sacred. The lion was thus held in veneration by one tribe, the crocodile by another, the python by a third, the bluebuck by a fourth, and so on. When a division of a tribe took place, each section retained the same ancestral animal, and thus a simple method is afforded of ascertaining the wide dispersion of various communities of former times. For instance, at the present day a species of snake is held by people as far south as the mouth of the Fish River and by others near the Zambesi to be the form in which their dead appear.

“This belief caused even such destructive animals as the lion and the crocodile to be protected from harm in certain parts of the country. It was not believed that every lion or every crocodile was a disguised spirit, but then any one might be, and so none were molested unless under peculiar circumstances, when it was clearly apparent that

the animal was an aggressor and therefore not related to the tribe. Even then if it could be driven away it was not killed. A Xosa of the present time will leave his hut if an ancestral snake enters it, permitting the reptile to keep possession, and will shudder at the thought of any one hurting it. The animal thus respected by one tribe was, however, disregarded and killed without scruple by all others.

"The great majority of the people of the interior have now lost the ancient belief, but they still hold in veneration the animal that their ancestors regarded as a possible embodied spirit. Most of them take their tribal titles from it, thus the Bakwena are the crocodiles, the Bataung the lions, the Baphuti the little blue antelopes. Each terms the animal whose name it bears its *siboko*, and not only will not kill it or eat its flesh, but will not touch its skin or come in contact with it in any way if that can be avoided. When one stranger meets another and desires to know something about him, he asks, 'To what do you dance?' and the name of the animal is given in reply. Dos Santos, a Portuguese writer who had excellent opportunities of observation, states that on certain occasions, which must have been frequent, men imitated the actions of their *siboko*; but that custom has now almost died out, at least among the southern tribes.

"The people along the south-eastern coast, though separated into distinct communities absolutely independent of each other from a time as far back as their tradition reaches, are of common tribal origin. They all regard the same species of snake as the form in which their ancestral shades appear."

Thus, if Dr. Theal's account is correct (and I know no reason to doubt it), the totemism of the Bantu tribes of South Africa resolves itself into a particular species of the worship of the dead; the totem animals are revered as incarnations of the souls of dead ancestors. This entirely agrees with the general theory of totemism suggested by the late G. A. Wilken and recently advocated by Prof. E. B. Tylor (*Journ. Anthr. Inst.*, XXVIII., p. 146 *et seq.*). How far that theory can be reconciled with the different explanations of totemism suggested by the Central Australian evidence (*Journ. Anthr. Inst.*, XXVIII., pp. 275-286; *Fortnightly Review*, N.S. LXV., pp. 647-665, 835-852), and confirmed, for the Papuan race, by the evidence collected by Prof. Haddon in Torres Straits (*Folk-lore*, XII., p. 230 *et seq.*) remains to be seen. Fresh light may perhaps be thrown on the question by the researches which Prof. Baldwin Spencer and Mr. F. J. Gillen are at present prosecuting in Central Australia. But it is quite possible, as Prof. Haddon has well said, "that what is described as totemism in one place may be different in its origin from that which is called totemism elsewhere." J. G. FRAZER.

Africa : East.

Felkin.

A Collection of objects from the district to the South-west of Lake Nyassa.
With notes by R. W. Felkin, M.D., and others.

112

The objects represented in the photograph were collected by the Rev. R. Stewart Wright, of the Maunse, Haydon Bridge, Northumberland. They are now in the possession of Dr. Felkin, and were exhibited at a meeting of the Anthropological Institute in the latter part of 1900 (*Journ. Anthr. Inst.*, XXX., *Miscellanea*, No. 120 pp.).

The information which has been collected about them is very scanty, and they are figured now in the hope that some of the readers of *Man* may be able to throw some further light upon their peculiarities.

Of No. 1 Mr. Stewart says:—"The scraper-and-dagger combined is used by the Shire Highlanders. It is made by the Ngoni, living to the west of Lake Nyassa, who do not think of putting a handkerchief to its legitimate use, when it will answer the purpose of a suit of clothes. The carrier, when toiling along under a heavy burden, with the sweat streaming down his face, scrapes it away with his iron scraper, while the reverse end may be useful as a defence should he be attacked at close quarters."

Nos. 2 and 3 are a combined dagger and beer ladle; the former lurks in the handle of the latter, which is hollowed to form its sheath. Mr. Stewart Wright says:—"The combined knife and beer ladle is unique, as I have never seen a duplicate of it. I should imagine that the maker had the idea that he would have a knife always at hand, in case of a drunken brawl. I got it in the Shire Highlands; it was made by a Manganga."



No. 4 appears to be a small fighting axe. The blade is of iron, and of a curious recurved form. The mode of hafting is peculiarly simple; the blade being simply thrust through a hole in the haft, and secured by a wrapping of bark-cloth. The handle is carved into a conventional representation of the head of a gazelle, or other horned animal. There are no details as to the place or mode of manufacture.

No. 5 is a short iron spear with a flowing tuft of hair at the butt-end. Mr. Stewart Wright says of it:—"The spear is made, fused, by the Ngoni. It is a stabbing spear, and used in finishing off the wounded after a battle."

India.

Ethnographic Survey.

Ethnographic Survey of India in connection with the Census of 1901.

Extract (Nos. 3219-3232) from the Proceedings of the Government of India in the Home Department (Public), under date Simla, the 23rd May, 1901; together with a letter from Sir Michael Foster, K.C.B., F.R.S., President of the British Association for the Advancement of Science.

In August 1882, when the statistics of the census of 1881 were still in process of compilation, the Census Commissioner suggested that steps should be taken to collect full information regarding castes and occupations throughout British India. The proposal was commended to local governments and administrations, and the Bengal Government undertook an ethnographic survey of the customs of all important tribes and castes in Bengal, and an anthropometric inquiry, according to the methods prescribed by the French anthropologists Broca and Topinard, into the distinctive physical characteristics of selected tribes and castes in Bengal, the North-Western Provinces, Oudh, and the Punjab. The results of these inquiries were recorded in the four volumes of the *Tribes and Castes of Bengal*.

In December 1899, when the preliminary arrangements for the census of 1901 were under consideration, the British Association for the Advancement of Science recommended to the Secretary of State, in the letter appended,* that certain ethnographic investigations should be undertaken in connection with the census operations. Their proposals may be summarized as comprising :—

- (i.) ETHNOGRAPHY, or the systematic description of the history, structure, traditions and religious and social usages of the various races, tribes and castes in India ;
- (ii.) ANTHROPOMETRY, or measurements directed to determining the physical types characteristic of particular groups ; and
- (iii.) PHOTOGRAPHS of typical individuals and, if possible, of archaic industries.

The scientific importance of the investigations recommended by the British Association is admitted in Sir Arthur Godley's letter, dated the 16th January 1900, to the address of the Association, and the Government of India are in entire agreement with this view. It has come to be recognised of late years that India is a vast store-house of social and physical data which only need to be recorded in order to contribute to the solution of the problems which are being approached in Europe with the aid of material much of which is inferior in quality to the facts readily accessible in India, and rests upon less trustworthy evidence. Mention may be made of Sir Alfred Lyall's *Asiatic Studies*, of Professor Haddon's *Study of Man*, of M. Émile Senart's *Les Castes dans l'Inde*, and of Dr. W. Z. Ripley's recent work on *The Races of Europe*, as showing the extensive use that has been made by ethnologists of data collected in India. It is true that various social movements, aided by the extension of railways, are beginning, as Sir Alfred Lyall and others have pointed out, to modify primitive beliefs and usages in India, but that is all the more reason for attempting to record them before they are entirely destroyed or transformed.

It is unnecessary to dwell at length upon the obvious advantages to many branches of the administration in this country of an accurate and well-arranged record of the customs and the domestic and social relations of the various castes and tribes. The entire framework of native life in India is made up of groups of this kind, and the status and conduct of individuals are largely determined by the rules of the group to which they belong. For the purposes of legislation, of judicial procedure, of famine relief, of sanitation and dealings with epidemic disease, and of almost every form of executive action, an ethnographic survey of India, and a record of the customs of the people is as necessary an incident of good administration as a cadastral survey of the land and a record of the rights of its tenants. The census provides the necessary statistics ; it remains to bring out and interpret the facts which lie behind the statistics.

Experience has shown that in ethnology, as in archæology, nothing can be done on a large scale in India without the active assistance of Government. That assistance, however, can only be given under certain conditions, the chief of which seem to the Government of India to be the following :—

- (i.) The scheme must not cost much ;
- (ii.) It must produce definite results within a reasonable time ; and
- (iii.) It must not impose much extra work on the district officers—Collectors or Deputy Commissioners.

* *British Association for the Advancement of Science, Burlington House, London W., December 1899.*

MY LORD—At the meeting of the British Association for the Advancement of Science at Dover, attention was called to the special opportunity offered by the census about to be taken in India for collecting valuable ethnographical data concerning the races of the country ; and the Council of the Association having taken the matter into consideration, and being impressed by its scientific

The scheme which has been prepared under the orders of the Governor-General in Council, and which has now received the sanction of the Secretary of State, is the following :—

- I. Local governments will select from among their officers some one who will undertake to carry on the inquiries proposed, in addition to his ordinary duties. He will be called Superintendent of Ethnography and will get an allowance of Rs. 200 a month. He will also have the services of a clerk.
- II. The Superintendent will correspond with district officers, but their obligations will, as a rule, be limited to ascertaining what persons in their districts are acquainted with the customs, traditions, &c., of particular tribes and castes, and to putting those persons into communication with the Superintendent, who will thereafter correspond direct with them and will trouble the Collector or Deputy Commissioner no further.
- III. Having thus secured his local correspondents, the Superintendent will furnish them with a set of questions which will be prescribed for general use, stating the points on which he requires information. A specimen set, which has been extensively used in Bengal and elsewhere, is appended to this resolution.

importance, have requested me, on their behalf, to bring to the notice of Her Majesty's Government the valuable scientific results which might be obtained by means of the census.

The results of the census itself constitute, of course, by their very nature, an ethnographical document of great value; and my Council feel that, without overburdening the officers of the census or incurring any very large expense, that value might be increased to a very remarkable degree, if to the enumeration were added the collection of some easily ascertained ethnographical data. They are encouraged to make this suggestion by the reflection that the Census Commissioner is an accomplished ethnographer, well known by his publication on the *Tribes and Castes of Bengal*, the valuable results of which would be supplemented by the inquiries now proposed. They feel confident that with his aid, and under his direction, most important data may be obtained at a minimum of effort and cost. I may add that, should the suggestion which my Council desire to make be carried out, a great step will have been taken towards establishing a uniform method of ethnographical observation in India—a matter of great scientific importance.

Stated briefly, what my Council desire to see carried out is as follows :—

1. While collecting the ordinary information for the census, to investigate the physical and sociological characters of the various races and tribes of India. Such data would furnish the basis for a true estimation of the number and distribution of the tribes in question, and thus powerfully contribute to a sound classification of the races of India. Special attention to be directed—

- (a) to the jungle races—Bhils, Gonds, and other tribes of the central mountain districts—concerning which our information is at present very limited;
- (b) to the Nagi, Kuki, and other cognate races of the Assam and Burmese frontiers, and of the vagrant and criminal tribes—Haburas, Beriys, Sansias, &c. in North and Central India;
- (c) to collect physical measurements, particularly of the Dravidian tribes, and of the Rajputs and Jats of Rajputana and the Eastern Panjab. Such data will be of the greatest service in throwing light on the important and difficult problem of the origin of these tribes and their relation with the Yu-echi and other Scythian races;
- (d) to pay special attention to the question of a possible Negrito element in certain ethnic groups in India.

2. To obtain so far as can be done, without too great labour and expense, a series of photographs of typical individuals of the various races, and if it should be practicable, of views of archaic industries, &c. This, which might be accomplished by placing photographers at the service of the Census Officers, would be the commencement of an Ethnological Survey of India, similar to, and certainly no less important than the Archaeological Survey, of which the Government of India may so justly be proud.

My Council in considering the above proposal have been assisted by a committee of gentlemen possessing special knowledge of the subject in question, and I am to add that this committee will be pleased to place themselves at the disposal of Her Majesty's Government to assist in the proposed investigation. If it should seem desirable to Her Majesty's Government, the Committee are prepared to put themselves into direct communication with the officers of the census, who, however, the Council have reason to believe, are fully capable of carrying out the details of the investigations proposed.—I have, &c., M. FOSTER.

The Secretary of State for India,

IV. The Government of India has further decided to place a sum of Rs. 2,000 a year at the disposal of the local government to be spent on honoraria to persons who draw up for the Superintendent approved monographs on particular castes, tribes or sects of which they happen to have special knowledge.

V. The information thus obtained will be collated by the Superintendent, and will be supplemented by his own inquiries from such representative men as he can find and by researches into the considerable mass of information which lies buried in official reports, in the journals of learned societies, and in various books. Settlement reports, as Sir Henry Maine pointed out long ago, are a mine of great value which no one but an Indian official can explore. The Superintendent will work up all this material into a systematic account of the tribes and castes of the province somewhat in the form adopted in *The Tribes and Castes of Bengal* and followed by Mr. Crooke for the North-Western Provinces and Oudh.

VI. By working on these lines the Government of India believe it will be possible to get a fairly complete account of the ethnography of the larger provinces drawn up within four or five years. The cost for each Province will be :—

	Rs.
Superintendent's allowance at Rs. 200	- 2,400
Clerk's pay at Rs. 50 (maximum)	- 600
Honoraria, &c.	- 2,000
Total	- 5,000 a year

and for eight provinces* the cost would be Rs. 40,000 a year. If the work takes five years, it will cost Rs. 2,00,000 ; but there are grounds for believing that it will not take so long. In Burma, for example, the population is comparatively homogeneous, and the number of different races and castes calling for separate inquiry is much smaller than in an Indian province. In the North-Western Provinces a considerable body of material is already on record in Mr. Crooke's *Tribes and Castes*, and although that work is understood to stand in need of condensation in some parts and of revision and expansion in others, this will hardly take as long as four years. In Bengal, again, the inquiries necessary for the production of a second edition of Mr. Risley's work could probably be completed in a year. On the whole, therefore, Rs. 1,50,000 may be taken as a fair estimate, excluding the cost of printing the results, which cannot be calculated at present. This sum is, in the opinion of the Government of India, not too much to pay for an ethnographic survey of British territory in India. His Majesty's Secretary of State for India has accorded his sanction to expenditure not exceeding this amount.

It has often been observed that anthropometry yields peculiarly good results in India by reason of the caste system which prevails among Hindus, and of the divisions, often closely resembling castes, which are recognised by Muhammadans. Marriage takes place only within a limited circle ; the disturbing element of crossing is to a great extent excluded ; and the differences of physical type, which measurement is intended to establish, are more marked and more persistent than anywhere else in the world. Stress was laid upon these points by Professor Topinard in reviewing at length the results of the measurements taken in Bengal, the North-Western Provinces, and the Punjab, and by the late Sir William Flower in his presidential address to the British Association in 1894. The Government of India propose to collect the physical

* Madras, Bombay, Bengal, North-West Provinces and Oudh, Punjab, Burma, Central Provinces, and Assam.

measurements of selected castes and tribes. In Madras the work can be done by Mr. E. Thurston, the Superintendent of the Central Museum, whose ethnographic researches in the south of India are well known, and who, it is understood, is likely to be selected by the Provincial Government as Superintendent of Ethnography for the Madras Presidency. For the rest of India it will probably be convenient to employ a Civil Hospital Assistant who worked under Mr. Risley in Bengal and is stated to have a competent knowledge of the subject. This part of the scheme will cost in all about Rs. 6,000, which will be placed at the disposal of Mr. Risley.

The proposal of the Association to place photographers at the disposal of the Census Officers is one which could not be carried out in practice. It would be very expensive ; it would interfere seriously with the proper duties of the Superintendents, and it would delay the submission of their reports. Moreover a large collection of photographs already exists at the India Office Library. The Government of India are further advised that, in comparison with measurements, photographs possess but little scientific value and they are not disposed to spend a large sum on making the volumes on ethnography more popular and attractive. This, however, will not preclude local governments from introducing illustrations into the volumes produced under their orders provided that they can make arrangements to meet the cost otherwise than from Imperial Revenues.

The general direction of the scheme will be entrusted to Mr. Risley, who is willing to undertake it in addition to his own duties, whatever they may be. It will be his business to prescribe a standard set of questions for use in all provinces ; to determine what castes and tribes should be measured and in what way ; to settle, in consultation with local governments, the form in which the results should be recorded ; and generally to advise on all questions that may arise. His official title will be for this purpose Director of Ethnography for India. The Governor-General in Council trusts that on this as on former occasions ethnologists and scientific societies in Europe and America will assist the Director with their advice, will refer to him points which they may wish to be made the subject of inquiry in India, and will, if possible, supply him with copies of publications bearing on the researches now about to be undertaken.

G. de Mortillet.

Giraux.

The Proposed Monument to Gabriel de Mortillet.

The President of the Anthropological Institute has received this communication, in regard to the memorial which it is proposed to erect to the memory of one of the most distinguished of French prehistoric archaeologists.

“ Sur l'initiative de la Société d'Excursions Scientifiques, un Comité vient de se former pour élever un monument à Gabriel de Mortillet, l'illustre palethnologue, créateur de la classification industrielle des temps préhistoriques

“ Composé par un artiste de talent et désintéressé, disciple et admirateur du maître, ce monument, dont le modèle a été offert à la Société d'Excursions Scientifiques, qui l'a accepté avec une profonde reconnaissance, sera en tout point digne de celui qu'il doit glorifier.

“ C'est donc pour rendre un public hommage à la mémoire du savant dont le nom est universellement connu et estimé, tout en dotant Paris d'une véritable œuvre d'art, que le Comité, pris dans le sein de la Société d'Excursions Scientifiques, fait appel à votre obligeant concours.

“ Il espère que vous voudrez bien participer à l'œuvre de justice et de reconnaissance qu'il entreprend. Les souscriptions sont reçues, dès à présent, par M. Louis Giraux, Trésorier du Comité, 22, rue Saint-Blaise, à Paris (xx*).”

In a further communication M. Giraux adds: "Nous venons solliciter tout particulièrement le concours à cette œuvre de l'Anthropological Institute of Great Britain and Ireland, dont Gabriel de Mortillet était membre d'honneur depuis 1882, persuadés qu'il tiendra à participer à l'hommage que nous voulons rendre au savant que vous avez compté parmi les membres les plus éminents de votre Société."

We have no doubt that when the list of subscriptions is closed, it will be found that the British admirers of the work of Gabriel de Mortillet have not been behindhand in their tribute to his memory.

REVIEWS.

Brunswick : Folklore.

Andree.

Braunschweiger Volkskunde. By R. Andree. Brunswick : Vieweg und Sohn 1901. Second edition. 8vo, pp. xviii, 531. With 12 plates and 174 blocks in the text. Price 7s.

115

Germany is probably the country where good folklorists go when they die. Dr. Andree has had the satisfaction of seeing the first edition of his *Volkskunde* (we have no English word for it) sell out in the comparatively short period of five years. As a result of his request for assistance, and, still more, thanks to his own indefatigable industry, he has been able to enlarge the volume by one-third.

Among the additions is a short note of only two pages to the "Vergôdendêl" question. It is the custom in various parts of Germany to leave the last bunch of ears on the harvest field, and to bring them to the village at a later period with more or less ceremony. This has been interpreted by Schwartz and others as a survival of the cult of Wodan, the words being regarded as equivalent to "Teil für den Herrn Wodan." A good deal of doubt has been thrown on this view by Knoop and others, who regard the names as equivalent to L. G. "für guten Teil." Dr. Andree seems to accept the theory of Schwartz. In Brunswick the name is often applied to the harvest supper, but in one instance Dr. Andree found that the last swath was not completely cut; a small portion was left, and this was "vergoudendêl. If this was really an offering to Wodan—and there is certainly a good deal to be said for this view—we can hardly avoid interpreting the German reapers' cry of "Wauw" or "Waul" as an appeal to Wodan. The reapers of Cheshire uttered the same cry at the end of the harvest, and they must have appealed to Wodan also with their cry of "Wow." We can hardly refuse to put the same interpretation on the Greek reapers' cry of *ὠὠας* (Athenæus, 14, 3, p. 618 ap. Casaubon). It has sometimes been supposed that the cult of Wodan was unknown or unimportant in South Germany. But if the above reasoning is correct, it is clear that we shall have to assume that he was known to the ancient Greeks. Dr. Brinton has shown that the cry of "Ya" is common to the religious ceremonies of very widely separated nations. Perhaps it would not be rash to explain the facts above-mentioned on similar lines without supposing them to refer to any particular deity: the similarity of sound would readily lead to this being referred to Wodan, and might even cause Wodan's association with agricultural ceremonies.

Within the limits of a short review it is impossible to do justice to the varied contents of this most interesting book and to deal with the many points of interest. Not the least interesting feature of the book are the many parallels to English customs and beliefs (many of them noted by Dr. Andree himself) which will suggest themselves to the reader. The chapters deal with the geography and history of the Duchy, the physical type of the inhabitants, the language (two Low-German dialects), the names of localities, &c., density of population, the villages and houses, the peasants, their dress, implements, customs and superstitions, popular games and rimes, and, finally, with the traces of the wends. The whole of the subjects are treated with a

remarkable conciseness, and many will regret that Dr. Andree has not allowed himself more licence in the way of an occasional *excursus*. In spite of the size of the book it may safely be said that there is still much to be collected in the Duchy, and the same applies still more to other districts. May they soon find an historian as devoted and reliable as Dr. Andree.

In the paragraph on "Blind Man's Buff," which is of the shortest, an interesting fact seems to have been omitted: from the *Braunschweigisches Magazin*, V. 102, it appears that "Blinneklaus" is a dialectical variant for "Blinde Kuh," an interesting parallel to the French name of the game.

N. W. T.

Congo: Ethnography.

Schmeltz.

Album of the Ethnography of the Congo Basin. By Dr. E. Schmeltz. 116
Kleimann, Haarlem, 1901. Publication of the Royal Ethnographical Museum, Leyden.

Every student of African ethnography and all museum keepers will be grateful to Dr. Schmeltz for this excellent work, of which the first half has already appeared. The drawings are good and clear and the polyglot descriptions are in the main well done, although it would have been better if the English portions had been submitted to some English friend. In some respects the plan has not been carried out in a practical manner. At the head of every plate is an inscription recording a fact that might well have come at the beginning of the book, *viz.*: That it is a publication of the Royal Museum; and in many instances this line of print comes so near the edge of the plate that it will be impossible to cut the upper edge of the book if bound. A similar mistake, perhaps more troublesome, is that if the description of the objects are too voluminous to find a place on the outer edge of the page they are continued on the inner edge, leaving only a margin of barely a quarter of an inch (7 mm.), obviously too little to allow the binding except by mounting every plate upon a guard—an expensive process. I think it only fair to mention these obvious defects because the book is evidently a copy of the Edge-Partington and Heape's *Album of the Pacific Islands*, and in that useful work all these mistakes have been avoided.

C. H. READ.

New Guinea.

Meyer & Parkinson.

Papua-Album II. By A. B. Meyer and R. Parkinson. Dresden, Stengel & 117
Co., 1900. Pp. 15, with 53 plates. Price 50s.

This album is a sequel to a similar one published in 1897, which is unfortunately now out of print, and owing to the loss of the negatives cannot be reproduced. There are 53 plates, all of which are of extremely high merit, both from an artistic as well as from an ethnological point of view, and to a student they are quite indispensable. The authors' names alone are, indeed, a guarantee of the accuracy and excellence of the work. Native life is shown from nearly every side: village life, religions, dwellings, wearing apparel and native ornaments, canoes, weapons, and such industries as the manufacture of pottery and shell armlets. The plates are full of life and vigour, No. 52 being as perfect as it could well be. In addition to that part of the world covered by Part I. (New Guinea and the New Britain Archipelago), a few plates are devoted to Matty Island; the inhabitants of which are not Papuan, but Micronesians, as Dr. Meyer explains in his introduction. The titles to the plates and the descriptive letterpress is in German and English. The translation has been revised by Mr. E. F. L. Gauss of Chicago, an almost unnecessary precaution considering Dr. Meyer's scholarly knowledge of the English language. It is, however, a good precedent that could be followed with success by other authors who attempt an English translation of their works.

J. EDGE-PARTINGTON.

North America : Folklore.

Fletcher.

Indian Story and Song from North America. By Alice C. Fletcher. Boston. Small, Maynard & Co., 1900. Fcp. 8vo, pp. xiv, 126.

118

The attention of students of savage music should be directed to this little book, in which Miss Fletcher has collected the specimens of music of the North American tribes previously published by her, and added others not hitherto printed. Several of them have been taken down by means of the graphophone, some of them transcribed by the late Professor Fillmore, and most of them (though sung in unison by the Indians) harmonized by him. They are given in their proper setting of story or description, and Miss Fletcher has added remarks on the place of music in Indian life, derived from her long acquaintance with the native tribes, especially the Omahas, and on the relation of story to song, which may be commended to the careful consideration of anthropologists.

E. S. HARTLAND.

Pacific : Nomenclature.

von Luschan.

Vorschläge zur Geographischen Nomenklatur der Südsee. By Professor F. von Luschan. 1899. (Extract from the Proceedings of the Seventh International Geographical Congress in Berlin.)

119

The subject of this address has already been noticed by the Anthropological Institute, and the resolution passed by the Council, on February 11th, 1899, shows the interest aroused by Professor von Luschan's scheme for checking abuses of geographical nomenclature. The author quotes in full the remarks made by Mr. C. H. Read, then President, in anticipation of the Berlin meeting, and the resolution by which they were followed (see *Journ. Anthr. Inst.*, XXIX., p. 330 ff.). It is satisfactory to have to record that Professor von Luschan's proposals were finally passed by the Congress in the form of a resolution with four clauses, of which the gist is as follows :—

1. Native names shall be retained wherever possible, and the greatest care shall be taken to establish their accuracy.
2. Wherever native names do not exist or cannot be established with certainty, the names given by first discoverers shall be adopted.
3. Arbitrary alteration of long-established or historic names is a source of confusion both to science and commerce, and should be resisted by all available means.

O. M. DALTON.

PROCEEDINGS OF SOCIETIES.**Proceedings.**

Soc. d'Anthr. de Paris.

Sommaire des Procès-verbaux de la Séance du 18 juillet 1901.

M. Ad. de Mortillet : Sur une pointe de flèche de Saône-et-Loire. Discussion : M. Atgier.

120

M. Thieullen présente des travaux sur les fouilles préhistoriques de l'Ukraine par le Comte Alexis Bobrinski.

M. Volkov : Antiquités de la région du Dniepre, par M. Khanenko. Discussion : MM. A. de Mortillet, Taté, Zaborowski, Deniker.

M. Manouvrier : Les ossements du dolmen de Presles. Discussion : MM. Deniker, Fouju.

M. Papillault : L'homme moyen à Paris, variations suivant le sexe et suivant la taille.

M. Lucien Mayet : Nouvelles recherches sur la répartition du goître et du crétinisme.

M. Ad. de Mortillet : Rapport sur l'Exposition de M. le baron de Baye.

MM. les Docteurs Roux et Thomas sont élus membres titulaires.





PAPUAN BOW-AND-ARROW FLEAM IN USE.

From a Photograph.



PAPUAN BOW-AND-ARROW FLEAM.

ORIGINAL ARTICLES.

New Guinea.

With Plate K.

Haddon.

A Papuan Bow-and-Arrow Fleam. By A. C. Haddon, ScD., F.R.S.,
President of the Anthropological Institute. **121**

Like most primitive peoples, the Papuans resort to blood-letting and counter-irritation to alleviate most of their aches and pains. During the recent Cambridge Expedition to British New Guinea we came across several examples of this practice. One of the most interesting of these was the one which is here illustrated. A small bow is made, usually of three midribs of coconut palm leaflets; these are tied together at their ends, and there is a third lashing near the centre of the bow: the bow string is a delicate vegetable fibre some 30-48 cm. in length. The arrow is also a midrib of a palm leaflet (about 27-34 cm. in length); this is passed between the elements of the composite bow, and the butt end is fastened to the string, while the free end is armed with a thorn or a splinter of glass. The surgical operation consists in repeatedly shooting the arrow at the affected part. The arrow is held between the thumb and index finger of the right hand and the remaining fingers draw back the string of the bow. This is the "secondary release" of Morse, which I have previously shown (*Journ. Anth. Inst.*, xix, 1890, p. 330) is the Papuan method. The arrow passes between the index and middle finger of the left hand as in ordinary Papuan archery.

This method of drawing blood was mentioned by the late Rev. James Chalmers, in his *Pioneering in New Guinea* (1887, p. 178), in the following words:—"Motu—Bleed with flint got at Port Moresby on a small arrow with bow made from "rib of coconut leaf." We obtained a specimen in the Mekeo district with a thorn point and several with glass points at Bulau in the Hood Peninsula, Rigo district. The operation was photographed for me by the late Anthony Wilkin at the latter village. In his *Annual Report on British New Guinea* (July 1896-June 1897; C. A. 6-1898, p. 6) Sir William Macgregor gives an illustration from a photograph of the use of this fleam, but as this publication is not very accessible I do not hesitate to publish another figure. There is a specimen of a bow-and-arrow fleam from South New Guinea in the Pitt Rivers Museum at Oxford. It was collected by Sir W. Macgregor and presented by Dr. John Thomson in 1897.

A. C. HADDON.

Asia Minor: Religion.

Crowfoot.

A Yezidi Rite. By J. W. Crowfoot, M.A.

Travelling last June (1900) on a "Messageries Maritimes" boat between **122**
Marseilles and Constantinople I met an Armenian who told me various things about the Yezidi. Many of these seem trivial enough, as, for instance, that they are fond of eating white mice, or that they collect the blood of slain animals and let it congeal and then fry it as a special delicacy. Others were accurate descriptions of the costume worn by their priests, and the tabus on various colours, &c., which are mentioned by all travellers. But one rite he described to me is entirely new and if true, as I believe, deserves publication. As a boy my informant lived in Armenia near Sert, where the Yezidi are very numerous, and once, when about ten years old, he happened to be present at one of their festivals in a village named Takhari, between Sert and Redvan. He was playing about at the time in the courtyard of a Yezidi's house, and, as he was a mere child, was either unnoticed or considered unworthy of attention, so he was able to see all that went on, and its strangeness impressed itself on his memory. This is what occurred: I use practically his own words. The head of the village came in with saddlebags hanging over his shoulders. From the bag in front, which was over his chest, he took the bronze figure of the Melek Taus which was wrapped carefully in linen. It was put on a mat

and the wrappings removed. The figure was shaped like a bird with a hole in the middle of the back covered by a lid, and a base like the stand of a candlestick. The bird was then filled with holy water through the hole, and while this was going on all sang songs in Kurdish. (My informant knew Kurdish as well as Arabic and Armenian, and was positive on this point.) Next, the priest approached it, kissed the basis first and then the other parts until he came to the beak. This was pierced, and the priest put his lips to it and sipped a drop of the water, and all those who were present, except, of course, the Armenian, "received the sacrament" in the same way, for so we must describe it.

Can we accept this account as true?

First, as to the character of this Armenian. He is well known to several English and American travellers and others, and those to whom I have applied say that they regard him as trustworthy on the whole. The story seems to be inherently probable and consistent, and he had no motive whatever for inventing it. If he had studied comparative mythology and had read accounts of a ceremonial "eating of the God" he might have made it up, but he was not a student of this subject or of any other, but simply a shrewd dragoman and commercial traveller. The recital of the circumstances which enabled him to see it inspires me with much more confidence than the claims of Layard and other travellers to have endeared themselves so deeply to the Yezidi that the latter made them free of all their mysteries.

Secondly, it is very easy to reconcile this with what we know of the Yezidi from other sources. Dr. Mark Lidzbarski has published an important document upon them in the shape of a petition dated 1872-73, giving various reasons why the Yezidi should not serve in the Turkish Army (Ein Exposé der Yesiden, *Zeitschrift der Morgenländischen Gesellschaft*, 1897, p. 592 foll.). The first runs thus "Every member of our sect, great and small, woman and maid, must three times in the year . . . visit the figure of the Melek Taus." For this purpose several of these bronze figures, said to number five now, are sent round to the various districts where Yezidi abound, and Sert is mentioned as one of the regular districts on these circuits (Siouffi, *Revue Asiatique*, sér. vii., tom. 20, p. 268, 1882). Now, according to M. Menaut (*Les Yezidiz, Leroux, Paris*, 1892, p. 95 foll.), the Melek Taus thus circulated is simply a badge with no ritual or religious significance attached to it, but serving as sole credentials to the messengers employed by the heads of the sect to levy contributions from the faithful. But there is no evidence to support this view except the word Sanjak (standard) sometimes applied to the figure; it absolutely fails to account for the reverence paid to this object, or for the choice of this object in particular. A badge of this type should be something which is secret, especially when it has the power of opening the purses of its beholders; the mere sentiment of the "Flag" may appeal to a patriotic Frenchman, but hardly in the same degree to an Oriental heretic. The position which the Melek Taus occupies in Dr. Lidzbarski's petition shows, I think, that some real boon, equivalent to the blessing derived from a sacrament, is obtained from it, and no doubt duly paid for. And the Armenian's story is further confirmed by a detail reported in Badger's account (*The Nestorians and their Ritual*, London, 1852) to which I have not referred before because its authority has been called in question: "Close by the stand [of the Taus]," writes Mrs. Badger, "was a copper jug, filled with water, which we understood was dealt out to be drunk as a charm by the sick and afflicted" (p. 124). The Yezidi refused to let the Badgers see their worship, and this explanation of the water was only given to throw them off the scent; the ritual described above suggests another use.

The conclusion, then, will be that the Taus is not merely a banner, but is, as the older writers said, itself an object of worship. The word, furthermore, no doubt, conceals the name of some old god, and we may follow Dr. Lidzbarski in making an equation

which occurred independently to the present writer. In the Harranian Calendar, published by Chwolsohn, occurs the name Taus, which Chwolsohn himself identified with Tammuz, and Professor Sayce has more recently connected with Theias or Thoas, who is in various places the Lemnian husband of Myrina, the king of Tauric Khersonese, the king of Assyria, the father of Adonis and Myrrha or Smyrna (*Hibbert Lectures*, 1887, p. 235). It is true that the Arabic letters which form the three names Taus, Taus, Tammuz, differ more than the ordinary English transliterations suggest (تموز, تاوز, طاوس), but this is not really a formidable objection to their identity. Tammuz becomes Taus by an omission of *m*, which is not uncommon in Kurdish names (see Lidzbarski) and which was well established, if Professor Sayce is right, in the classical period. Then Taus is identified with Taus (peacock) by a piece of vulgar etymology. The survival of the name of so important a god as Tammuz is intrinsically likely enough, and it is probable that more than the name has survived; the red anemones which, according to the Badgers, played a great part in the April celebrations, deserve more notice than they have had. And, again, the peacock element may have some more material foundation than the mere verbal assonance; as Sir George Birdwood writes (*Athenæum*, 30th September 1899), "the Melek Taus may indeed be an actual relic of Babylonian or Assyrian art."

More interesting to anthropologists than these speculations about origins will be, perhaps, the recurrence of the same figure among the Tachtadji in Lykia, a phenomenon to which writers on the Yezidi do not refer. Among the Tachtadji, however, the Melek Taus, so far, at least, as the reports of Von Lusehan and Bent carry us, has no bronze embodiment; the natural peacock with them is regarded as the incarnation of evil. The Tachtadji speak Turkish only, the Yezidi Kurdish and a little Arabic. They live very far apart. To what, then, are we to attribute this common element? Two possibilities seem to be open to us. It might conceivably be an independent survival in each case of the Tammuz-Thoas worship which once extended over the whole area. Or there may in more recent times have been some connection between the two peoples, which has now been lost or else has completely eluded the observation of travellers.

Two religious developments seem to be universal over the whole Islamic area, the worship of Saints (Welis, Dedes, Marabouts), and the existence of Orders or Fraternities; both are common to the heretics as well as the true believers, but the former try, ineffectually indeed, to shelter themselves under the prestige of an orthodox Saint, in the case of the Yezidi, for example, Sheikh Adi (see Siouffi, *Journal Asiatique*, 1885, p. 78). I have shown how closely parallel this is with the pre-Christian worship of heroes (*J. A. I.*, 1900), and need not say more about it here. The religious Orders belong to another phase. The worship of heroes is something essentially local, and belongs to the family; the Fraternity is something which is in itself open to all, and knows no limits of race or place. One of the great Muslim Orders will include Negroes Arabs, Berbers, Turks, and Persians; difference of language is no bar. In the Pagan world they correspond to the thiasoi or brotherhoods of Orphic or Pythagorean initiates. It is, perhaps, on the lines of one of these Fraternities that subsequent research will prove that the common elements of Yezidi and Tachtadji may be explained.

J. W. CROWFOOT.

Egypt.

Petrie.

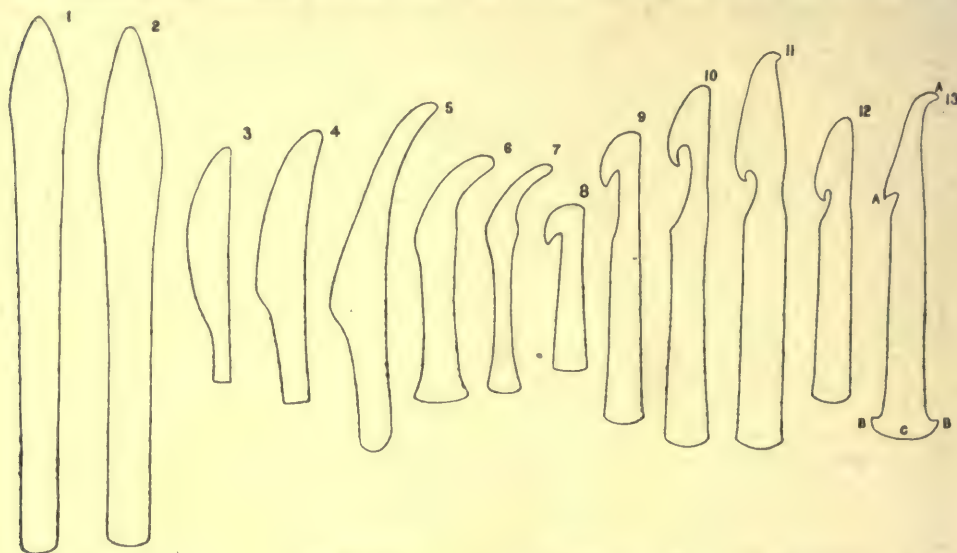
Egyptian Cutting-out Tools. By W. M. Flinders Petrie, Edwards' Professor of Egyptology at University College.

123

The use of special tools for cutting out textile fabrics has not yet been recognised in Egypt, nor perhaps elsewhere. When we notice the very elaborately made clothing of the Eighteenth Dynasty and later, and when we handle the exquisitely fine linen,

it is obvious that there must have been some efficient means of cutting out such materials. So far as we know shears or scissors are of Italic origin, and were quite unknown in the East until Roman times ; therefore some form of knife must have been used as we now use scissors.

A peculiar class of knife, marked here 9 to 13, has long been known in museums ; it is common, and appears to have been a personal tool and not a trade tool, as it is



[. . 1st Dynasty . .] [. 12th Dynasty] [. . 13th-14th . .] [. . . . 18th-19th Dynasties]

EGYPTIAN CUTTING-OUT TOOLS. SCALE, 1 : 4.

found singly in graves along with the tweezers, the mirror, and other personal objects. The cutting edges are at A-A (called here the main edge) and B-B (called here the butt edge) ; the remainder of the outline is smooth and rounded, suitable for holding in the hand.

As to the use of it we may set aside leather cutting, as the tool for that is often shown on the monuments, and was a short axe-like blade set in a rounded block of wood ; the thinness of some of these knives, moreover, is quite unsuited for so tough a material as leather. The form is, however, admirably adapted for cutting textiles ; the slant of the main edge enables the hand to grasp the stem clear of the cutting board. The narrow ends of the main edge, especially in 11 and 13, enable the user to see clearly the position of the cut.

The butt edge is a further evidence of its use ; for in thus slicing textiles, tough threads, or some not well cut, would drag, especially in narrow gores ; in such case a rocking cut with the butt edge would be required to chop through them.

If we once recognise the use of these tools we may see other examples of the cutting-out tool in earlier times.

No. 1 is a copper tool with a main edge on each side at the top ; while all the rest of the length and the butt was smoothed for holding. This belonged to a domestic of King Zer, of the First Dynasty, about 4700 B.C.

No. 2 is a similar knife of copper ; bought in Egypt, locality unknown. Both 1 and 2 are clearly not for ordinary cutting, as of meat, but are suited for outline cutting on a board.

No. 3 is the usual type of copper knife of the Twelfth Dynasty, here given to show how the cutting-out knives 4 and 5 have been specialised by only forming the

edge where it can cut on a board while held in the hand. None of these have butt edges, but were set in wooden handles.

Nos. 6 and 7. The butt edge, for chopping through threads, comes into use at this point, and the main cutting edge is more curved and thrown back.

Nos. 8 and 9. The width of the blade seems to have been felt to be a disadvantage in seeing the end of the cut; so the main edge was brought forward and ended below in a point or hook in advance of the handle. This type begins probably in the Thirteenth or Fourteenth Dynasty.

Nos. 10, 11, and 12. The type is very common in the Eighteenth Dynasty. The butt edge was widened more and more.

No. 13. Lastly, in the Nineteenth Dynasty the butt edge projects in two points at the sides. After this date the form seems to have passed out of use. What cutting-out tool was used between 1100 and 300 B.C. we do not yet know.

This whole class of outline cutters for use on a board should be worked out in other countries for comparison. Perhaps some anthropologist will follow this new type elsewhere.

W. M. FLINDERS PETRIE.

Totemism.

Haddon.

Totemism: Notes on Two Letters published in the "Times" of September 3rd and 7th, 1901. By A. C. Haddon, ScD., F.R.S.

124

Under the titles of *A New Record of Totemism*, describing what he believes to be an important discovery of worked flints, and *The Early Man and His Stones*, the Hon. Auberon Herbert has written letters to the *Times* of September 3rd and 7th respectively, which are as sensational as they are long. It is well recognised that those who may be termed outsiders often make fruitful suggestions or even important discoveries which have been overlooked by the professional teachers or investigators of a particular branch of science. Scientific men heartily recognise the labours of amateurs when they are carried out in the true scientific spirit, and all our museums have been enriched by collections amassed by enthusiasts from the mere "collector" to the erudite expert. Mr. Herbert will doubtless have more than one opportunity of presenting his evidence before anthropological or antiquarian experts, and he may rest assured that it will receive due consideration. The lesson of the first discovery of stone implements has not been forgotten.

Mr. Herbert claims that certain gravel beds in the valley of the Avon in South Hampshire extending over a tract of country for some 20 miles in length and of considerable breadth and from three to seven feet in depth practically consist of "stones handled" and worked by the earlier races; and, one may add, representing the strongest and "deepest feelings of their life . . . The gravel beds may be called, without exaggeration, a mass of worked stones . . . What are these stones? Certain well-marked types are constantly repeated, and I do not think that one can resist the belief that the greater number of the stones are representations of the totems of the tribes. They seem to be a new volume of *Totemism* suddenly placed in our hands. Many of the stones may be holy stones, amulets, or stones consecrated. Some may have been cut for purposes of decoration. There is also an interesting class of stones which, if I am right, were cup stones used as sacrifices. But I think all these other classes are subsidiary to the totem class—that is, to the stones which represent some animal or object which existed as the totem and had a sacred character. To make matters more clear I will presently return to the subject of the totem, for unless one understands something of the totem, one cannot understand the stones."

A description is then given of a number of forms which appear to the writer of the letter to resemble suns, moons, pyramids, snakes, fish, seals, teeth, tusks, mountains, peaks, mountain ranges, flames, animals, parts of the body, and so forth. "There are

"also a large number of stones which are, so to speak, only ear-marked. That is to say, the medicine man has placed his mark on them, has initialled them, made them magical or holy. It is only by rather close observation that you will detect these marks, but I think there can be little doubt about them . . . They seldom, if ever, treat their stones in vulgar fashion. They are careful and almost tender in dealing with whatever seems to them strange and mysterious. There is no childish hacking to see what the new thing is." We must do Mr. Herbert justice to state that he says he puts forward his "interpretations with great reserve"; but, on the other hand, it is evident he is a strong believer in his assumptions, which certainly appear incredible to scientific students.

It is most remarkable that Mr. Herbert does not once refer to his finding any implements, all his specimens belong to a very different category. If his stones were worked by man there would surely have been an immense number of tools and weapons in the same deposits. It is well known that many uncritical collectors have been only too ready to recognise natural forms in concretions and in adventitiously flaked flints, but until those in question have been examined by competent authorities it would not be fair to prejudice Mr. Herbert's proposition. There are, however, very strong grounds for assuming that they are not artefacts. Mr. Herbert hopes other persons will examine other gravel beds. There is no doubt that innumerable forms similar to those described by him will be found in almost any gravel pit; doubtless also many very similar specimens could be found *in situ* in the majority of quarries of the upper chalk.

By a strange coincidence, in the current number of the *Bulletins et Mémoires de la Société d'Anthropologie de Paris* (V^e série, Tome II., 1901, p. 166) there is a paper by A. Thieullen, entitled "*Deuxième étude sur les pierres figures à retouches intentionnelles à l'époque du creusement des vallées quaternaires.*" M. Thieullen exhibited before the Society a number of stones with rounded bosses which approximately represent a fish, a human right foot, the head of a horse, camel, roe deer, duck, and other animals, these are claimed to have been slightly improved, usually by the addition of eyes, by the palæolithic artists. He complains that when he exhibited his specimens and delivered his arguments before the International Congress of Anthropology on Archæology at Paris in 1900 he was received with jests. The prehistoric archæologists of Paris, with few exceptions, deny human workmanship in the figures, whereas, according to him, their *confrères* of the provinces labour to elucidate the problem. "Where, then," says he, "shall we appeal? Must one await a future generation of prehistorians free at length from prejudice?" It does not follow that every collector of stones that have a remarkable appearance is a Boucher de Perthes. The French enthusiast compares his specimens with the fetishes of various savage peoples. Certainly it is true that primitive folk do employ natural or slightly worked stones as fetishes or as charms for magical purposes, but that proves nothing in the present instance.

Three questions are started by Mr. Herbert's letter: (1) the age of gravel beds; this can only be settled by geological evidence. (2) The natural or artificial production of the forms of the stones; which can only be proved by an examination of the stones and a comparison with others that are known to be natural stones or known to be artefacts. (3) Assuming for the moment the artificial character of any of them, what were they fashioned for? Mr. Herbert with marvellous temerity rushes to the conclusion that they were "totems."

Totemism has too long been a "blessed word," and the time has arrived when strong protest must be made against the misuse of the term. There are many animal and plant cults in the world, totemism is one of them; indeed, it is probable that what is described as totemism among one people may be different from what is called totemism elsewhere. Should this prove to be the case, the term should be restricted to practices and beliefs which are undoubtedly similar to those of the Ojibway cult. It is entirely

unwarrantable to speak of every animal cult as totemism: the elucidation of primitive beliefs is rendered more difficult—one might say it is made almost impossible—by such looseness of terminology. It is not going too far to assert, whatever the stones may be, they can never be proved to be totems or representations of totems. A. C. HADDON.

England: Skull.

Layard.

Notes on a Human Skull found in Peat in the Bed of the River Orwell, Ipswich. By Miss Nina Layard (cf. MAN, 1901. 131). **125**

This skull was obtained by the writer in January last from the captain of a dredger employed on the River Orwell at Ipswich. It was found when deepening the channel in May of last year. After working out the overlying mud, a bed of peat was reached; which was in such a dry condition that it choked the machinery. As nearly as could be estimated the skull was found embedded in the peat at a depth of about four feet. After being dredged up it was rescued by the captain, and for nine months remained hoisted on a pole in the dredger, exposed to wind and weather. The skull was very black when first found, but in course of time became bleached. Some oil dropping upon it from the machinery above gave it its present brown appearance. One side of the skull is much worn away by exposure to the air and moisture, while the other side is almost perfect.

In February last the writer presented the skull to the Royal College of Surgeons, and Dr. Stewart has kindly sent the following measurements:—

Circumference - 530 mm.	Capacity - 1,570 c.c.	Orbital width - 37 mm.
Length - 188 mm.	Basi-nasial length 101 mm.	„ height - 29 mm.
Breadth - 140 mm.	Breadth index - 74·5	„ index - 78·4
Height - 133 mm.	Height index - 70·7	

Phys. Anthropology: Brain.

Symington.

On the Temporary Fissures of the Human Cerebral Hemispheres, with Observations on the Development of the Hippocampal Fissure and Hippocampal Formation. By Prof. J. Symington, M.D., Queen's College, Belfast (cf. MAN, 1901. 131). **126**

This paper discussed the views recently published by Hochstetter, who maintains that the so-called temporary or transitory fissures of the human cerebral hemispheres, which have been described by so many anatomists as existing towards the end of the third and during the fourth months of foetal life, are not present in the fresh brain, but are the products of commencing maceration and putrifaction. The author of the paper admitted that the frequency of the occurrence and the depth of these fissures had been exaggerated, but he showed a number of photographs of specimens, both macroscopic and microscopic, in support of the views that they did occur in well-preserved material. He admitted, however, that the arcuate fissure, even if not an artificial product, had no morphological significance, and that its posterior part had nothing to do with the hippocampal fissure. He also exhibited a series of sections of the brain of a human foetus in which the hippocampal fissure and the hippocampal formation could be traced from near the temporal pole of the hemisphere upwards and forwards towards the frontal end of the brain, dorsal to the developing transverse commissures. Attention was directed to the interest of these facts in connection with the position of the hippocampal fissure and formation in the marsupialia and monotremata where they occupy a similar position throughout life. These observations also support the opinion hitherto based mainly on comparative anatomy, that the rudimentary grey and white matter existing on the dorsal aspect of the adult human *corpus callosum* is the remains of a hippocampal formation.

Egypt.

Myers.

The Bones of Hen Nekht, an Egyptian King of the Third Dynasty. By Charles S. Myers (cf. MAN, 1901. 131). **127**

From archaeological data, it appears that Hen Nekht ruled over Egypt in the Third Dynasty, about 4000 B.C. His tomb, with its contents of bones and pottery, was discovered last season near Girgeh, by Mr. John Garstang, to whom my thanks are due for permission to publish these remarks before they are included in the official report, which will appear later through the aid of the Egyptian Research Account.

The bones of Hen Nekht are interesting, not only because he is by far the earliest known king whose remains have been found, but because they are the first which can



SIDE.



BACK.



FRONT.



TOP.

with any certainty be dated as belonging to the Third Dynasty. They proclaim him to have been a man of unusual height. His stature probably exceeded 1870 millimetres, while the average stature of later and prehistoric Egyptians was 1670 millimetres. The proportions of his long bones to one another were such as characterise negroid skeletons, a condition frequently observed in the prehistoric period, and commonly in the later period of the early empire. The skull was very massive and capacious, and extraordinarily broad for an Egyptian, the cranial index coming almost within the bounds of

brachycephaly. Its features agreed more closely with those of dynastic than with those of prehistoric skulls.

We turn now to history for the mention of an early Egyptian king of phenomenal stature. To such a king both Manetho and Eratosthenes allude. According to the former historian he was Sesochris, penultimate king of the Second (Thinite) Dynasty; according to the latter he was Momcheiri, first king of the Third (Memphite) Dynasty. It is in the highest degree probable that these are two names of one and the same king. The view I here offer seems to solve many difficulties.

Mr. Randall-MacIver's measurements make it probable that from the late prehistoric times onward, a people distinguished by broader heads, longer noses, and other characters gradually made their way and became absorbed into the long-headed population of This and its neighbourhood. These broader-headed people formed the ruling class of the earliest dynasties. According to history and tradition they founded Memphis, and doubtless multiplied there. By the Third Dynasty, according to Manetho, they beganto build houses of hewn stone, and probably they constructed the earliest Egyptian pyramids. They developed at Memphis a remarkable school of sculpture, soon producing the most life-like wooden statue of a man that has ever been made; he, too, was broad-headed. Up to the time of Hen Nekht, the broader-headed line of kings styled themselves Thinite, and continued to be buried near This, in conformity with the ancient tradition of the people with whom they had come into contact. In the end, however, Memphis outvied This, and kings who succeeded Hen Nekht began to forsake the simple Thinite burials for the pyramids of Saqqarah, Gizeh, and Abousir. Thus Hen Nekht may be considered in name and culture to be of the Third, or Memphite Dynasty; but, by his burial near This, came to be regarded as belonging to the previous Thinite Dynasty.

The broader-headed race above mentioned is commonly thought to have arrived first in the Nile Valley at Koptos (Quft) from Punt, a land sacred to the later Egyptians, the situation of which it is conjectured was near Somaliland and the opposite coast. There is, however, some geological evidence to show that the Red Sea extended in historic times through the lakes near to Ismailia. Accordingly the people of Punt, wandering northward from their home along the shores of the Red Sea, could conceivably have made their way with ease to the Nile Valley nearer Memphis. It is, however, not less probable that Asia rather than Punt was the home of this broader-headed race. The earliest dynastic Egyptians used the Babylonian seals and the Babylonian cubit. To Asia and Central Europe we are wont to look for the broader-headed people. Moreover, according to the Greek legend,* Memphis was founded by the marriage of Memphis, daughter of the Nile, with Epaphus, who born of the Grecian Io (Isis) was carried off when a babe to Syria, and brought back by his mother to Egypt.

Scotland : Pigmentation.

Gray : Tocher.

The Frequency and Pigmentation Value of Surnames of School Children in East Aberdeenshire. By J. F. Tocher, F.I.C., and J. Gray, B.Sc. **128**

In the course of a pigmentation survey carried out by us in East Aberdeenshire in 1896 and 1897 we obtained the statistics of the surnames and pigmentation of 14,561 (practically the whole) school children there. An analysis of the physical characteristics, apart from the surnames, has already been published.† The present paper deals with the distribution of the frequency of surnames and their correlation with pigmentation. We have found that among the 14,561 children there are 751 different surnames. The frequency of these surnames varies between 1 and 267, Milne being the most frequent, the next in order being Smith, Taylor, Stephen, and Bruce. If the surnames are

* Cf. Ridgeway, *Early Age of Greece*, I. 217.

† *Journ. Anthr. Inst.*, Vol. XXX., pp. 104-125.

arranged in order of frequency a curve representing the frequency takes the form roughly of a rectangular hyperbola. The distribution of surnames is very unequal: for example, one-half of the population has to be content with $12\frac{1}{2}$ per cent. of the surnames, while one-half of the surnames is monopolised by 950 persons. Hereditary surnames were not in common use in Scotland until the thirteenth and fourteenth centuries. There is a presumption, therefore, that the present possessors of surnames inherit some of the physical characteristics of ancestors of that date. It becomes necessary to investigate the origin of surnames. We have divided them broadly into two classes: (1) Lowland, including names of Anglo-Saxon, Norman, and Scandinavian origin; (2) Highland, including names derived from the names of Highland clans. Of the 751 surnames, 63 were Highland, representing 13-14 per cent. of the population. It is interesting to note that in a previous investigation* we came to the conclusion, from an analysis of the measurements of the adult population, that the Highland element was present to the extent of 14 per cent. in East Aberdeenshire. We have calculated the pigmentation value of the hair and eyes for the 59 most frequent surnames, and arranged them in series according to pigmentation. We find that there is a wide variability in the pigmentation of different surnames, pointing to the conclusion that septs or clans, as represented by surnames, tend to retain distinct physical characteristics. Amongst the darkest in the series we find surnames common in fishing communities. This supports the tradition that the fishing population on the east coast of Scotland is of Belgian origin, since the Belgians are the darkest people of Northern Europe. We find that the pigmentation of Highland surnames corresponds closely with the pigmentation in their districts of origin. An example of this is seen in the blonde Frasers, having their origin in the blonde Inverness district, and dark Robertsons and Gordons in dark Perthshire and West Aberdeenshire. The surnames of Wallace, Pirie, Grant, Park, and Birnie, we find, have strong blonde tendencies, while the surnames of Cordiner, Cruickshank, Stephen, Strachan, Buchan, Paterson, and Whyte are darkest in our list. The surnames having the largest percentage of red hair are Rennie, Scott, Grant, and Thomson, and those having the least percentage are Johnston, Walker, Burnett, Forbes, and Watson.

The validity of these conclusions depends on whether they are confirmed by a complete survey of the whole of Scotland, which, we hope, may be carried out at an early date.

Linguistics.

Frazer.

Men's Language and Women's Language. By J. G. Frazer, M.A., Litt.D.

129

In *The Fortnightly Review* for January 1900 I collected evidence as to certain differences of speech between men and women which have been observed in some South American tribes, and I suggested that such differences may perhaps furnish the clue to the origin of gender in language. Whatever may be thought of that suggestion, it seems desirable to bring together all reported cases of divergence of speech between the sexes, as these can hardly fail to be philologically interesting. Hence I venture to submit to readers of MAN the following passages which I have lately met with in D'Orbigny's well-known work on the South American Indians (*L'Homme Américain*, Paris, 1839). The writer spent about eight years with a French scientific expedition exploring a great part of South America. The Chiquitos Indians to whom he here specially refers are a considerable tribe, or rather nation, inhabiting the dense forests of Eastern Bolivia. Their language, according to D'Orbigny, is one of the most copious and complete in America. Speaking of the South American languages in general he says: "Un autre genre d'exception a donné lieu à beaucoup de réflexions; dans telle langue, les mots employés par l'homme sont, en majeure partie, différents de ceux qu'emploie la femme, où chaque mot, en passant par la bouche de

* See *Proc. Brit. Assoc.*, Bradford, 1900.

" cette dernière, prend une terminaison distincte. La langue des Chiquitos offre, au plus haut degré, ce caractère ; mais dans les autres il se réduit, lorsqu'il s'y trouve, aux titres de parenté. Depuis bien longtemps* on a expliqué cette anomalie, par l'habitude de certains peuples conquérans (des Guaranis surtout), de tuer les hommes et de garder les femmes, supposition qui nous paraît assez probable" (*L'Homme Américain*, I., p. 153). Again, in treating specially of the Chiquito nation, he says : " Une anomalie singulière se présente dans la langue chiquita, où, pour beaucoup de choses, l'homme emploie des mots différens de ceux dont se sert la femme, tandis que pour les autres, la femme emploie des mots dont l'homme se sert, en se contentant d'en changer la terminaison " (*op. cit.* II., p. 135). Again, speaking of the same language, he remarks : " Une particularité de cette language, c'est la différence d'expression des mêmes objets pour les deux sexes. Non-seulement les noms des objets indiqués par la femme ont une terminaison autre que pour les hommes, mais encore il y a souvent des mots tout à fait dissemblables ; ainsi l'homme exprime père par *Iyãĩ* et la femme par *Yxupu* (prononcez *Ychoupou*) " (*op. cit.* II., p. 163). J. G. FRAZER.

REVIEW.

Greece : Prehistoric.

Hall.

The Oldest Civilisation of Greece : Studies of the Mycenaean Age. By H. R. Hall, M.A., Assistant in the Department of Egyptian and Assyrian Antiquities, British Museum. London : David Nutt, 1901. 8vo, pp. xxxvi, 346. Price 15s.

130

Two books dealing with the never-ending Mycenaean question have lately been given to the world. With the first of the two to appear we have not to deal (it is, in fact, incomplete) ; nor, indeed, does it proceed on the same lines as Mr. Hall's work.

The latter is an attempt to do for the controversial questions, inspired by the now enormous mass of "Mycenaean" material, what has already been done for the material itself by Schuchhardt, Perrot, and Tsountas. The writings of these three scholars do not pretend to deal with other than ascertained facts, though they do not indeed always escape the imputation of regarding as fact what should really only be treated as well-supported hypothesis. Mr. Hall's object, on the other hand, is not so much to give a *resumé* of discoveries up to date, but rather with the mind of an unprejudiced critic, to weigh the import of these discoveries and of the theories based on them. Without laying down any definite theory of his own, he holds a middle course between the views of those who argue for extreme limits of date ; and, while avoiding mere negations, he has, in our opinion, gone far in the direction of "properly basing" the question.

The book is divided into eight chapters, comprising nearly 300 pages, and amply illustrated by 75 cuts, several of which are from unpublished objects in his own Department of the British Museum.

It is the special merit of this book that in it we have, for the first time, a careful and judicial estimation of the evidence to be obtained from Egypt by a specialist in the archaeology of that country. We have only to turn to the table given on page 76, where we may see, at a glance, the chief items of evidence for Mycenaean dating and the respective value of each item. Mr. Hall never forgets to warn his readers of the danger of accepting Egyptian evidence without hesitation, more especially in the case of scarabs. But, after all, even if scarabs were banned as evidence, ample material would still remain. For instance, there are the Tell-el-Amarna deposits of 1400 B.C., with their wealth of Mycenaean vase-fragments, as well authenticated a criterion as could be wished, and no archaeologist can overlook them. Mr. Hall, with praiseworthy discernment, carefully sifts the good from the bad—or doubtful—evidence, a most important matter.

* Père Raymond Breton, *Dictionnaire caraïbe*, p. 229, publié en 1665.

Equal caution must be employed in treating evidence from Cyprus, and here again we think Mr. Hall has done well. We do not understand how archæologists can shut their eyes to the fact that Mycenæan remains in Cyprus last down to the eighth century B.C. (possibly even later). On the other hand, it would be equally absurd to draw the opposite conclusion that what is late in Cyprus must also be late at Mycenæ or Ialysos. The circumstances easily admit of explanation. Always ultra-conservative, Cyprus, which probably only felt the influence of Mycenæan civilisation towards its decline in Greece, naturally retained it for several succeeding centuries, during which it can hardly be said to have been affected by the Dorian invasion. Surely we may see in the legend of the colonisation of Salamis by Teucer, supported, perhaps, by the wonderful finds at Enkomi, traces of an Achæan settlement subsequent to the Trojan War, which was only an offshoot of the general stream of migration from West to East.

So far we are arguing with Mr. Hall that the "working hypothesis" of the Mycenæan question is to be accepted, and that its "Blütezeit" is to be regarded as lasting from about 1600 B.C. to 1200 B.C., first in Crete, afterwards under the Achæan hegemony at Mycenæ; that the Dorian migration took place about 1000 B.C., and that the Achæans, or Mycenæans were then driven out of the mainland of Greece.

Further, we are entirely at one with him in his incidental treatment of the Homeric question. Every scholar is familiar with the archæological difficulties which this presents, but many are too much occupied with dovetailing them into their own theories to treat them with impartiality.

Mr. Hall aims a few gentle shafts at Professor Ridgeway and his Pelasgian theory, and we think he is right in urging that there is no need to identify the Mycenæan civilisation *exclusively* with the Pelasgians; nor, on the other hand, to confine it exclusively to the Achæans or any other race.

One of the most valuable features of the book is the diagram of an approximate chronological scheme which, by-the-by, does not follow page 292, as indicated in the contents, but page 324. Where all is admittedly tentative and hypothetical we refrain from criticism of detail, but it might have been an improvement if the arrangement had been different, the dates in the vertical columns, and the localities in the horizontal.

Space forbids us to dwell on the many subjects suitable for comment which Mr. Hall's luminous and suggestive chapters present, but a few small points, perhaps, call for criticism. The title of the illustration on page 24 is unfortunate; we fear the L.C.C. would hardly pass such an edifice as a "model" dwelling. We confess to a personal prejudice against the copulated "æ" which is used (but not quite consistently); but printers are notoriously difficult to convert to the more correct typography. Mr. Hall writes well and clearly throughout, but he should try to avoid the vulgarity of the "split infinitive." H.

PROCEEDINGS OF SOCIETIES.

Proceedings.

British Association.

Anthropology at the Glasgow Meeting of the British Association for the Advancement of Science (September 11th-18th, 1901).

131

The Anthropological Section of the British Association met at Glasgow in the new Anatomy Department of the University, the formal opening of which took place on the first afternoon of the meeting. The president of the section, Professor D. J. Cunningham, M.D., F.R.S., of Trinity College, Dublin, took as the subject of his inaugural address, "The Human Brain, and the part which it has played in the Evolution of Man," and discussed the relations which are found to exist during foetal life between the brain itself and the brain case, laying particular stress upon the specifically human

development of the parietal lobe at the expense of the occipital, and on the importance of the "insular district" as the seat of the brain centres for the arm, face, and mouth, and consequently for the higher activities of speech, gesture, and technical skill. "It is certain," he concluded, "that these structural additions to the human brain are no recent acquisition by the stem-form of man, but are the result of a slow evolutionary growth—a growth which has been stimulated by the laborious efforts of countless generations to arrive at the perfect co-ordination of all the muscular factors which are called into play in the production of articulate speech;" and further, if this be so, "it would be wrong to lose sight of the fact that the first step in this upward movement must have been taken by the brain itself. Some cerebral variation—probably trifling and insignificant at the start, and yet pregnant with the most far-reaching possibilities—has in the stem-form of man contributed that condition which has rendered speech possible. This variation, strengthened and fostered by natural selection, has in the end led to the great double result of a large brain with wide and extensive association areas and articulate speech, the two results being brought about by the mutual reaction of the one process upon the other." The address will be found printed in full in the *Proceedings of the British Association (Glasgow) 1901*, and in a current number of *Nature*. A full abstract of it appeared in the *Glasgow Herald* of September 13th and in the *Times* of September 14th.

The Glasgow meeting was noteworthy for the unusual number of papers on points of human anatomy. Some of these, it is true, were hardly of a direct anthropological bearing, but the presidential address showed clearly enough the necessity of confronting from time to time the current speculations about the origins of speech and culture with the data of brain-morphology. Scottish ethnology was but poorly represented; there were fewer ethnographic papers than usual; and folklore and kindred topics were almost absent. Archaeology, on the other hand, both local and general, was prominent, and considerable interest was aroused by the group of good papers and reports on the antiquities of Crete and the Syrian coast. A full list of the reports and papers follows; those to which the words "MAN, 1901, below" are appended will be published wholly or in abstract in subsequent numbers of MAN.

ANTHROPOGRAPHY.

PROF. CLELAND, F.R.S.—*The Cartilage of the External Ear in the Monotremata, in Relation to the Human Ear*. In echidna the tube of the ear shows 16 bars united by a continuous line of cartilage, and the tube expands into a pinna of enormous size, which had hitherto escaped notice. In ornithorhynchus the tube is not broken into bars separated by fissures, and the pinna, hitherto undetected, is small, but of a kind not unlike that found in echidna. Discussion: Sir Wm. Turner, F.R.S., Prof. Macalister, F.R.S., Prof. Sherrington, F.R.S.

J. F. GEMMILL, M.D.—*On the Origin of the Cartilage of the Stapes and on its continuity with the Hyoid Arch*. The series of sections exhibited shows that in the human subject the whole of the cartilage of the stapes is developed independently of the periotic capsule, and that it belongs to the hyoid bar. The sections also illustrated the fate, at different stages, of that part of the hyoid bar which lies between the stapes and the styloid process. The *incus* represents the primitive suspensorial element, *i.e.*, the hyo-mandibular. Discussion: Sir Wm. Turner.

MISS NINA LAYARD.—*Note on a Human Skull found in Peat in the Bed of the River Orwell, Ipswich*. (MAN, 1901, 125.) The skull was exhibited. Discussion: Prof. Macalister said the skull was of the same type as those found in the fen district, which he had always associated with the pre-Roman Britons.

PROF. A. MACALISTER, M.D., LL.D., F.R.S.—*Some Notes on the Morphology of Transverse Vertebral Processes*. The application of this term in the descriptions of

the several regions of the human spine is unsatisfactory, and the author has endeavoured to determine, by embryological evidence, the morphological relations of the several parts of the neural arch. The factors which cause the differentiation are the juxtaposition of the rib and the variable relations of the arch to the surrounding muscles.

PROF. A. MACALISTER, M.D., LL.D., F.R.S.—*A Note on the Third Occipital Condyle*. There are two structures comprised under this name, one a mesial ossification in the sheath of the notochord, and the second a lateral, usually paired, form of process, caused by the deficiency of the mesial part of the hypochordal element of the hindmost occipital vertebra with thickening of the lateral portion of the arch.

PRINCIPAL MACKAY, M.D., LL.D.—*On Supra sternal Bones in the Human Subject*. Discussion: Prof. Cleland, Prof. Paterson.

PROF. J. SYMINGTON, M.D.—*On the Temporary Fissures of the Human Brain, with Observations on the Development of the Hippocampal Fissure and Hippocampal Formation*. (MAN, 1901. 126.)

J. F. TOCHER, F.I.C., and J. GRAY, B.Sc.—*The Frequency and Pigmentation Value of Surnames of School Children in East Aberdeenshire*. (MAN, 1901. 128.) Discussion: Prof. Cunningham observed that, unfortunately, the paper was dealing with names that extended all over Scotland, while it studied them as applied to a limited district only, and discussion upon it could only be of value when they got a survey on similar lines of the whole of Scotland. Mr. Tocher and Mr. Gray proposed to make a survey of the school names of the whole of Scotland correlated with the pigmentation of hair and eyes, and their more extensive report would be extremely valuable for discussion. He wished to know why the Macdonalds were credited with having inherited their fair hair from Scandinavian ancestry, whereas all the Dalriadic Scots came from Ireland in the third century, and their ancestors in the third century, as far as they could discover, had light brown hair and blue eyes. A committee of the Association was appointed to assist Messrs. Tocher and Gray in their researches.

W. M. DOUGLAS. — *Personal Identification: a Description of Dr. Alphonse Bertillon's System of Identifying Fugitive Offenders*. The practicability of the system for police purposes had been tested by the writer, and it had been demonstrated that men of ordinary intelligence can master its apparent intricacies and apply it successfully. Discussion: Dr. Garson congratulated Glasgow on the energetic expert who had charge of this important division. The colour of the hair and the eye was practically useless for identification, while the form of the nose and ear was most important. Photographs for the purpose of identification were of no value; but everyone carried in his finger prints an almost absolute means of identification. The chances of two persons having the same finger prints was something like one in 64,000,000,000.

ETHNOGRAPHY.

REPORT of the Ethnographic Survey of Canada. (MAN, 1901. 133.)

J. O. BRANT SERO.—*Dekanawideh, the Law-Giver of the Caniengahakas*. (In full, MAN, 1901. 124.)

HESKETH PRICHARD.—*The Tehuelche Indians of Patagonia*, to be published shortly in full.

SEYMOUR HAWTREY.—*The Lengua Indians of the Gran Chaco*, to be published in full in the *Journal of the Anthropological Institute*. Discussion: Mr. Millington, Mr. Balfour, Mr. Myres.

DR. F. P. MORENO.—*Notes on Argentine Anthro-po-geography*. Communicated to the geographical section: to be published shortly in full.

W. H. R. RIVERS, M.D.—*On the Functions of the Maternal Uncle in Torres Strait*. (MAN, 1901. 136.) To be published in full in the Report of the Cambridge Expedition to Torres Strait.

W. H. R. RIVERS, M.D.—*On the Functions of the Son-in-Law and Brother-in-Law in Torres Strait.* (MAN, 1901. 137.) To be published as above.

C. S. MYERS, M.A.—*Some Emotions in the Murray Islanders.* (MAN, 1901, below.)

W. CROOKE.—*Notes on the proposed Ethnographic Survey of India.*

REPORT of the *Skeat Expedition to the Malay Peninsula*: section on *Malay Industries.* (MAN, 1901, below.) The rest of the report of the expedition will be found in *Proc. Brit. Assoc.*, 1900 (Bradford) and 1901 (Glasgow).

W. W. SKEAT, M.A.—*The Sakais and Semangs: Wild Tribes of the Malay Peninsula.* To be published in full in the *Journal of the Anthropological Institute.*

N. ANNANDALE and H. C. ROBINSON.—*Anthropological Notes on the Sai Kan, a Siamo-Malayan Village in the State of Nawnchik (Tojan).* (MAN, 1901, below.)

R. SHELFORD, M.A.—*A Provisional Classification of the Swords of the Tribes of Sarawak,* to be published.

FOLKLORE, &C.

R. A. S. MACALISTER, M.A.—*Notes on some Customs of the Fellahin in Western Palestine.* (MAN, 1901, below.) Discussion: Mr. Crooke commented on the wide range in the East of the marks on walls and lintels, described by Mr. Macalister.

D. MACRITCHIE.—*Hints of Evolution in Tradition.*

J. S. STUART GLENNIE.—*Magic, Religion, and Science.*

GENERAL.

REPORT of the Committee on the Registration of Anthropological Photographs.

REPORT of the Committee on the State of Anthropological Teaching in the United Kingdom and elsewhere.

ARCHÆOLOGY.

REPORT.—*On the Age of Stone Circles: Excavations at Arbor Low* (MAN, 1901, below); details in full in *Proc. Brit. Assoc.*, 1901 (Glasgow). Discussion: Mr. Lewis observed that it would be a mistake to suppose that these circles are all of the same age. Special local types are found in Aberdeenshire, Inverness-shire, and on the west coast of Scotland; and in England the types are different again.

W. ALLEN STURGE, M.D.—*On the Chronology of the Stone Age of Man, with especial reference to his co-existence with an Ice Age.* (MAN, 1901, below.) Discussion: Sir John Evans, Professor Kendal, Mr. Lounge, Dr. Munro, Professor Macalister.

G. COFFEY.—*Naturally Chipped Flints for comparison with certain Forms of alleged Artificial Chipping.* A series of flints from the Larne gravels and North of Ireland beaches was exhibited showing different pieces chipped by the action of the sea; also a number of flints, collected on Ballycastle beach, which had been chipped by last winter's storm. These Nature-dressed chips so closely resemble the alleged artificial chipping of the neolithic implements as to prevent any certain conclusion being reached as to what really is artificial chipping.

EBENEZER DUNCAN, M.D., and T. H. BRYCE, M.A., M.D.—*Remains of Prehistoric Man in the Island of Arran.* (MAN, 1901, below.) To be published more fully in the *Journal of the Anthropological Institute.* Discussion: Sir William Turner, Professor Macalister, Mr. Somerville, Dr. Garson.

MISS NINA LAYARD.—*An Early Palæolithic Flint Hatchet with alleged Thong-marks.* The implement in question was found in Levington Road, Ipswich, at a depth of about five feet. In depressions about the butt-end the natural skin of the flint nodule remained, and it was contended that these patches showed traces of wear; and that this wear was produced by a thong. Discussion: Sir John Evans did not consider that the alleged thong was a thong, or that the patches were worn by friction.

MISS NINA LAYARD.—*Horn and Bone Implements found at Ipswich.* The specimens exhibited came from various parts of the town, and from various depths.

Some have clearly served as picks ; others, though suggestive of a pick, are too awkward for this use, though in one case the tip of the tine has been sharpened. Ten of these horns were found lying together at a depth of five to six feet together with one rudely fashioned as a knife handle. Four others were found in gravel at the depth of 23 feet, of which, however, 12 feet were made-earth. Other specimens exhibited included a bone needle, a horn awl, and a pair of bone skates from a depth of 10 feet in College Street, Ipswich.

F. D. LONGE.—*A Piece of Yew from the Forest Bed on the East Coast of England, alleged to have been cut by Man.* The piece of yew was found by the author in the Kessingland "freshwater bed" belonging to the Cromer Forest-bed series, in a section exposed after a high tide at the foot of the sea cliff. It bears two oblique cuts made by some instrument "much sharper and thinner than the large manufactured implements with which we are so familiar." The author believes that the circumstances of the discovery preclude the idea that the cuts are recent, but admits that they were not noticed by him till some days afterwards, when the piece of yew was being cleaned.

G. COFFEY.—*Exhibit of Manufactured Objects from Irish Caves.*

R. MUNRO, M.D.—*Notes on the Excavation of an Ancient Kitchen-Midden near Elie, in Fife.* (MAN, 1901, below.) To be published more fully in *Proc. Soc. Anthr., Scotland*, 1901.

REPORT.—*Excavations in the Roman City at Silchester.* The excavations of 1900 were confined to the large area situated between *Insula XII.* (excavated in 1894) and *Insula XXII.* (excavated in 1899), and extending up to the north gate and town wall. The area in question contains four *insulae*, which have been numbered XXIII. to XXVI. Taken as a whole, the results of the season's work were fully up to the average, both in the character of the buildings uncovered and the variety and number of objects found in and about them. The quantity of pottery and a hoard of smith's tools are also quite exceptional. The objects in bronze, bone, &c., also include many interesting things. The coins found were as numerous as usual, but not very important. A detailed account of all the discoveries was laid before the Society of Antiquaries on May 23, 1901, and will be published in *Archæologia*. It is proposed, during the current year, to excavate a strip of ground east of *Insula XXI.* and *XXII.*, and, if possible, to begin the systematic exploration of the grass field in the centre of the town.

J. H. CUNNINGHAM.—*The Roman Camp at Ardoch.* (MAN, 1901, below.)

THOMAS ROSS.—*The Roman Camp at Delvine, Inchtuthill.* (MAN, 1901, below.)

R. A. S. MACALISTER, M.A.—*External Evidence bearing on the Age of Ogham Writing in Ireland.* (MAN, 1901, below.) Discussion: Mr. Coffey.

REPORT of the Cretan Exploration Committee. (MAN, 1901, below.) The report is printed in full in *Proc. Brit. Assoc.*, 1901 (Glasgow). Discussion: Sir John Evans, Professor Macalister.

R. C. BOSANQUET.—*Excavations at Præsos in Eastern Crete.* (MAN, 1901, below.)

A. J. EVANS, M.A., F.R.S.—*The Neolithic Site at Knossos in Crete.* (MAN, 1901, below.) To be published separately in full. Discussion: Professor Sayce, Mr. Myres.


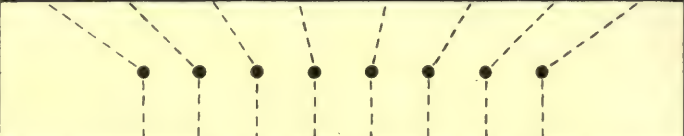
D. G. HOGARTH, M.A.—*Explorations at Zakro in Eastern Crete.* (MAN, 1901, below.)

R. A. S. MACALISTER, M.A.—*Some Results of recent Excavations in Palestine.* (MAN, 1901, below.) Discussion: Sir John Evans, Professor G. A. Smith, Mr. Myres.

C. S. MYERS.—*The Bones of Hen Nekht.* (MAN, 1901, 127.) Discussion: Professor Macalister.

MR. JAMES PATON, B.A., Curator of the Corporation Museums and Galleries and Hon. Sec. of the Fine Art Section of the Glasgow Exhibition, met members of the section in the West Court of the Art Galleries in the Glasgow Exhibition, and conducted them through the collection of Prehistoric Antiquities.

STANDARD SCHEME OF DESCENT

PARENTAL GRADES NUMBER IN EACH	u 22	t 67	d 161	r 250	R 250	S 161	T 67	U 22
1000 COUPLES BOTH PARENTS OF SAME GRADE AND ONE ADULT MALE CHILD TO EACH								
REGRESSION OF PARENTAL TO FILIAL CENTRES								
22 CHILDREN OF u	6	8	6	2				
67 " OF t	7	17	23	15	4	1		
161 " OF d	5	22	50	52	25	6	1	
250 " OF r	2	14	51	86	68	25	4	
250 " OF R		4	25	68	86	51	14	2
161 " OF S		1	6	25	52	50	22	5
67 " OF T			1	4	15	23	17	7
22 " OF U					2	6	8	6
SUMS	20	66	162	252	252	162	66	20

ORIGINAL ARTICLES.

Race Improvement.

With Plate L.

Galton.

The Possible Improvement of the Human Breed under the existing Conditions of Law and Sentiment. By Francis Galton, D.C.L., D.Sc., F.R.S. Abstract of the Huxley Memorial Lecture, delivered before the Anthropological Institute of Great Britain and Ireland on Tuesday, October 29th, 1901. 132

The aim of the lecture is to give a scientific basis to the problem of race improvement under the existing conditions of civilisation and sentiment. It leads to many subsidiary problems, each interesting to anthropologists on its own account.

Men differ as much as dogs in inborn dispositions and faculties. Some dogs are savage, others gentle; some endure fatigue, others are soon exhausted; some are loyal, others are self-regarding. They differ no less widely in specialities, as in herding sheep, retrieving, pointing at game, and following trails by scent. So it is with men in respect to the qualities that go towards forming civic worth, which it is not necessary at this moment to define particularly, especially as it may be a blend of many alternative qualities. High civic worth includes a high level of character, intellect, energy, and physique, and this would disqualify the vast majority of persons from that distinction. We may conceive that a committee might be entrusted to select the worthiest of the remaining candidates, much as they select for fellowships, honours, or official posts.

Distribution in a Population.—It is a fair assumption that the different grades of civic worth are distributed in accord with the familiar normal law of frequency. This means nothing more than that the causes why civic worth varies in amount in different persons are numerous and act independently, some pulling this way, some that, the results being due to the ordinary laws of combination. As it is found that such very different variables conform fairly to this law, as Stature, Bullet holes around the bull's-eye, Error of judgment of astronomers, and Marks gained by candidates at examinations, whether in simple or in grouped subjects, there is much reason to believe that civic worth will do so also. The figures will then come out as follows: Let the average civic worth of all the male adults of the nation be determined and its value be called M , one-half of them having less and the other more than M . Let those who have more than M be similarly subdivided, the lower half will then have M plus something that does not exceed a sharply-defined amount, which will be called 1° , and is taken as the unit of distribution. It signifies the height of each step or grade between the limits of the successive classes about to be described. We therefore obtain by familiar methods the result that 25 per cent. lie between M and $M + 1^\circ$ (call it for brevity $+ 1^\circ$); 16 per cent. between $+ 1^\circ$ and $+ 2^\circ$; 7 between $+ 2^\circ$ and $+ 3^\circ$, and 2 for all beyond $+ 3^\circ$. There is no outer limit; the classification might proceed indefinitely, but this will do at present. Similarly for the negative grades below M . It is convenient to distinguish the classes included between these divisions by letters, so they will be called R, S, T, U , &c., in succession upwards, and r, s, t, u , &c., in succession downwards, r being the counterpart of R ; s of S , and so on.

These normal classes were compared with those of Mr. Charles Booth in his great work, *Labour and Life of the People of London*. His lower classes, including the criminals and semi-criminals, correspond in numbers with " t and below"; those higher than small shopkeepers and subordinate professional men correspond with " T and above," and the large body of artisans who earn from 22s. to 30s. a week exactly occupy the place of mediocrity; they include the upper four fifths of r and the lower four fifths of R . So far as these may represent civic worth they confirm as far as they go its fairly normal distribution.

The differences between the classes are exemplified by the figures relating to the stature of many thousand adult males, measured at the Health Exhibition. Their

average height was nearly 5 ft. 8 in., the unit of distribution was nearly $1\frac{3}{4}$ in., so the class U exceeded 6 ft. 1 in.; consequently even U overlooks a mob, while V, who exceed 6 ft. $2\frac{3}{4}$ in., and much more the higher grades, tower above it in an increasingly eminent degree.

Worth of a Child.—Dr. Farr calculated the value at its birth of a baby born of the wife of an Essex labourer, supposing it to be an average specimen of its class in length of life, in cost of maintenance while a child and in old age, and in earnings during youth and manhood. He capitalised with actuarial skill the prospective values at the time of birth, of the outgoings and the incomings, and on balancing the items found the newly-born infant to be worth 5*l*. A similar process would conceivably bring out the money value at birth of children destined when they grew up to fall into each of the several classes, and by a different method of appraisal to discover their moral and social worth. As regards the money value of men of the highest class, many found great industries, establish vast undertakings, increase the wealth of multitudes and amass large fortunes for themselves. Others, whether rich or poor, are the guides and light of the nation, raising its tone, enlightening its difficulties and imposing its ideals. The more gifted of these men, members of our yet undefined X class, would be each worth thousands of pounds to the nation at the moment of their birth.

Descent in a Population.—The most economical way of producing such men may be inferred from the Table of Descent accompanying the memoir, calculated for an ideal population, on the supposition that all marriages are equally fertile, that the statistical distribution of qualities continues unchanged and that the normal law of frequency prevails throughout. In this particular table it was also supposed that both parents were always alike in quality. The diagram that illustrates it shows also very clearly the contributions of each class of parent to each class of the next generation. The V class of parentages number 35 per 10,000, which represents in the 40,000,000 of the population an annual output of 1,300 male youths of that class who attain their majority in the same year. Of the 34 or 35 V sons 6 come from the 35 V-class parents, 10 from the 180 U, 10 from the 672 T, 5 from the 1,614 S, and 3 from the 2,500 R. Therefore V is 3 times richer than U in producing V offspring, $11\frac{1}{2}$ times than T, 55 times than S, and 145 times richer than R. Economy of cost and labour in improving the race will therefore depend on confining attention to the best parentages. The falling off when only one of the parents is of the V class and the other unknown was shown to be a little more than $4\frac{1}{2}$.

In dealing with large numbers the statistical constancy of the result resembles those of a fixed law. The above figures might then be accepted as certainties like those in tables of mortality, if they are founded on a correct hypothesis. It is not claimed that the hypothesis is more than approximately correct, but in any case the results will be constant and probably not very different from those given in the table. They showed that 35 marriages of two persons each of class V will produce five adult sons and five adult daughters of that same V class. They will also produce ten of each sex of the U class and 12 of the T. A discount will have to be taken off these figures in deducting their significance, because the performance in mature life often falls short of its promise in youth. The lecturer strongly condemned the neglect by educational authorities to investigate the correlation between youthful promise and subsequent performance, by the closeness of which the value of the present huge system of examinations can alone be judged.

Augmentation of Favoured Stock.—Enthusiasm to improve our race might express itself by granting diplomas to a select class X of young men and women, by encouraging their intermarriages and by promoting the early marriage of girls of that high class. The means that are available consist in dowries, where a moderate sum is important, help in emergencies, healthy homes, pressure of public opinion, honours, and the intro-

duction of religious motives, which are very effective as in causing Hindoo girls and most Jewesses to marry young. The span of a generation would be thereby shortened, which is equivalent to increasing the fertility of one that was unshortened. It would also save the early years of the child-bearing period from barrenness. Healthy homes would diminish mortality among children, and in that way increase the output of adult offspring. There is a tendency among girls to shrink from marriage on prudential grounds. This feeling might be directed in the opposite way, by making it an imprudence in an X girl not to gain the advantages that would reward the indulgence of a natural instinct. It was concluded that the effect of a widely-felt enthusiasm for improving the race might be expected to add an average increment of one adult son and one adult daughter to the prospective offspring of each X girl. These would be distributed among the X, W, and V classes much as the offspring of V parentages are distributed among the V, U, and T classes, but not in quite such high proportions, which were five of each sex to the first, ten to the second, and so on.

Economical Problem.—The problem to be solved now appears in a clear shape. An X child is worth so and so at birth and one of each of the inferior grades respectively is worth so and so; 100 X-favoured parentages will each produce a gain of so many; the total value of their produce can therefore be estimated by an actuary, consequently it is a legitimate expenditure to spend up to such and such an amount on each X parentage. The distinct statement of a problem is often more than half way towards its solution. There seems no reason why this one should not be solved between limiting values that are not too wide apart to be useful.

Existing Agencies.—Leaving aside profitable expenditure from a money point of view the existence of large and voluntary activities should be borne in mind that have nobler aims. It appears that the annual voluntary contributions to public charities in the British Isles amount on the lowest computation to 14,000,000*l.*, and that, as Sir H. Burdett asserts on good grounds, is by no means the maximum attainable (*Hospitals and Charities*, 1898, page 85).

A custom has existed in all ages of wealthy persons befriending poor and promising youths which might be extended to young and promising couples. It is a conspicuous feature in the biographies of those who have risen from the ranks, that they were indebted for their first start in life to this cause. Again, it is usual among large landowners to proceed not on the rackrent principle, but to select the worthiest all round for tenants and others in their employ, and to give them good cottages at low rents and other facilities. The advantage of being employed on one of those liberally-conducted properties being thoroughly appreciated, there are usually many applicants to each vacancy, so selection can be exercised. The result is that the tenants and servants of all kinds to be found about them are a finer stamp of men to those in similar positions elsewhere. It might easily become an avowed object of noble families to gather fine specimens of humanity around them, as it is to produce fine breeds of cattle and so forth, which are costly in money but repay in satisfaction.

Finally, there are building societies that have higher ends than mere investments and which have been endowed with princely generosity. A settlement of selected persons might conceivably be maintained that should bear some analogy to colleges with their fellowships, and include a grant of rooms for a term of years at low cost. A select class would create through their own merits an attractive settlement, distinguished by energy, intelligence, and civic worth, just as a first-rate club attracts desirable candidates by its own social advantages.

Prospects.—It is easy to indulge in Utopias, including a vast system of statistical registration, but the pressing need is to establish a firm basis of fact for the roads that lead towards race improvement. The magnitude of the inquiry is great, but its object is one of the highest that man can hope to accomplish, and there seems no reason to

doubt its practicability to a greater or less degree. The question of how much may be reasonably anticipated must be delayed until the problems that have been indicated are more or less satisfactorily solved.

FRANCIS GALTON.

America: Ethnography.

Hill-Tout, &c.

(1.) *The Ethnographic Survey of Canada.* Abstract of the report of the Committee of the British Association for the Advancement of Science, presented at Glasgow, September 17th, 1901; to be printed in full in *Proc. Brit. Assoc.* (Glasgow), 1901. 133

(2.) *Ethnological Studies of the Mainland Halkōmēlēm, a Division of the Salish of British Columbia.* Abstract of a paper by Chas. Hill-Tout, appended to the above Report.

(1.) The Committee records with regret the very sudden decease of its secretary, Dr. G. M. Dawson, which occurred at Ottawa on March 2, 1901. Dr. Dawson had been identified with the work of this Committee from the time of its organisation, at first as its chairman and later as its secretary. His well-known ethnological studies in connection with the Indians of the Pacific coast, and the keen practical interest which he constantly manifested in the prosecution of such work gave special weight to his connection with this Committee, the object of which commanded his warmest sympathy and his deepest interest. The Committee is keenly sensible of the great loss it has sustained in the removal of one whose broad interest in the progress of scientific research, and whose intelligent appreciation of the many difficult problems connected with the prosecution of ethnological work in a country where the conditions are changing so rapidly, gave him exceptional qualifications for the guidance of the work, and imparted to those especially engaged in collecting data a never-failing stimulus and enthusiasm.

The Committee desires to be reappointed, and recommends Mr. C. Hill-Tout, of Abbotsford, British Columbia, to be appointed secretary, and the Rev. John Campbell, of Montreal, to be a member of the Committee.

Renewed negotiations with certain of the provincial governments have been opened during the year with a view to having the work of this Committee placed upon a more permanent basis, and it is hoped that favourable results may appear before our next annual report is made. Dr. Ganong has undertaken the organisation of systematic work in New Brunswick, with special reference to the remnants of Indian tribes. The anthropometric work of the Committee continues. Mr. Léon Gérin has continued his studies with reference to the Iroquois of Caughnawaga (*Caniengahaka*, cf. *MAN*, 1901. 134). Mr. A. F. Hunter has published in the *Archæological Report of Ontario* for 1900 his third contribution to the bibliography of Ontario archæology; and in Vol. III. of the Ontario Historical Society, an article on *The Ethnographical Elements of Ontario*, which has been reprinted separately and may be obtained through the Committee.

(2.) Mr. Hill-Tout has continued his studies of the Salish tribes of British Columbia. His report for this year, which deals chiefly with the Halkōmēlēm tribes of the Lower Fraser, is given in abstract below, and will be published more fully next year.

This report deals chiefly with the *Teil'qēuk* and *Kwāntlen* tribes in the lower Fraser district. The former are not true members of the Halkōmēlēm division, though they now speak its tongue. They are more communistic in their mode of life than other tribes. The office of principal chief generally descended from father to son. Their potlatch and other feasts have been reluctantly given up. The tribe eat together as one family. Their permanent habitation was the communal long house; each family was entitled to a space 8 talz square, a talz being the length of the space between the

outstretched arms of a man measured across the chest from finger to finger. Their baskets and other utensils were necessarily large. The author describes the functions of the shaman, and discusses the origin of the *súia*, which he believes to be a connecting link between fetichism and totemism. The mortuary customs differ in detail from those of other tribes. He did not gather much information as to the puberty customs. The tribe formerly possessed a large stone statue to which they attached a supernatural origin. He records the myth of the "blanket beating" and other tales. He criticises Dr. Boas' observations on the language of these tribes, but suggests the general use of the phonetic system adopted in his reports. He has given particular study to the pronouns and demonstratives. He obtained linguistic information from three of the Indians, which he discusses at length. He adds a glossary of the *Teil'qēuk* language.

The *Pilátq* are a small tribe on the lower *Chilliwaek* river, numbering now only 25. They were formerly divided into five villages or camps and had three classes of shamans. The author records several of their myths. They have given up their ancient mortuary customs under missionary influence, and now adhere to those of their white neighbours.

The *Kwáutlen* were formerly one of the most powerful and extensive of the *River Halkómēlen* tribes, their chief claiming to be the supreme chief of the whole. They had a subject tribe called the *Kwikwilem*. Of their origin they give various mythical accounts. They lived in the communal long house, but do not appear to have taken their meals in common. The choice of a wife or husband was always made by the parents. The author was unable to discover anything like a developed totemic system among them. Their social organisation had not reached to the secret society stage. The *Stä'm* was the tribal high priest. He addressed the "sky chief" as *Cwai'Ebsen* or "father." One of their prayers is thus translated, "O supreme Father, have pity on me. Wherefore hast thou brought me here on this earth? I desire to live here on this earth which thou hast made for me." They have eight different kinds of dances. The shamans practised fire-handling and other kinds of magic. All dancing was accompanied by singing. They believed it was *Qäls* the Transformer who taught them to pray. Their naming ceremonies were occasions of general festivity and presents of blankets. Their phonology does not differ from that of the *Teil'qēuk*. The author adds much linguistic information.

He appends free translations of the following stories:—1. The Magic Water and Salmon. 2. *Smeló* and *Skelút'emes*.

To the notes on the archaeology of the district already published by him in the *Transactions of the Royal Society of Canada* and in the *Mining Record* of Victoria, British Columbia, he adds some further particulars of researches among the ancient middens. Every variety of arrowhead was found, and stone swords of several patterns, but objects of bone predominated. The skulls found are dolichocephalic and appear to belong to predecessors of the present races, possibly the ancestors of the subject tribe referred to. There are other more recently formed middens. Many interesting specimens from these have been secured by the New York Museum of Natural History. There are many burial mounds or tumuli. Few or no relics are recovered from them. The greater number are within a rectangular boundary of stones. Different kinds of sand are found in them spread in distinct layers or strata of varying thickness. In only one instance was he able to discover a few bones and a portion of a skull, which had not only been deformed in lifetime but had suffered from pressure in the ground. He sums up as the result of his investigations of the archaeological remains that the Lower Fraser was in possession of a primitive people, probably not less than 2,000 years ago, which differed from existing tribes both physically and in respect of its mortuary customs. The race to which these ancient midden and mound builders belonged cannot yet be determined.

America : Iroquois.

Brant-Sero.

Dekanawideh; the Law-giver of the Caniengahakas. By (Ra-onha) John Ojijatekha Brant-Sero (Canadian Mohawk). (Cf. MAX, 1901. 131.)

134

Of the North American aborigines, the Caniengahakas are the most ancient and honourable known. Fragmentary knowledge of these people in their tribal relations have been gathered from time to time by the early travellers and others holding positions of political and religious importance in the New World. For many generations past these "People of the Flint," as their name implies, have been known to the general reader of fiction by a nick-name, the Mohawks, which it appears originated in Fleet Street, London, England. Thoughtful European minds must have considered the name more pronounceable than appropriate.

The "Mohawks" are the first nation in that aboriginal confederacy which was once so powerful and extended its influence over a vast trackless part of the North American continent. The confederacy has been perpetuated by various names, such as the "Five Nations," the "Six Nations," "the People of the United Long House,"

Rodinonsh'onni," and the "Iroquois." Like many other races of mankind, the Mohawks considered themselves to be the "real" and most important people in the land. They taught their children to regard themselves as the "real people." They did not, however, proclaim themselves as the "only" people. Endowed physically and mentally, their idea of freedom was so absolute, that we can safely accuse them of possessing that generous hospitable spirit of rivalry and fidelity to a degree hitherto unheard of.

Some speculation, I understand, having existed for a long time regarding the word "Iroquois," might I be allowed to digress from the main point and give my version? *Rongwe*, in the Mohawk tongue means "man"; *I-ih* means "self," that is, "I am"; and *I-ih rongwe*, "I am the real man," obviously is the origin of the word. The propensity of the old Iroquois to extol their superiority on the chase, coupled with an absolute indifference to the horrors of torture at the stake, lend in some degree the possibility of allowing my contention to be accepted as based upon reasonable probability.

As a representative of a race who have not yet produced a chronicler, my claim to speak rests upon the fact that we are not as a people "numbered among the war-like dead," neither are we inclined to be rated among the dying "backward races of the world." My story in effect is the unwritten constitutional law and government of the Caniengahakas, as given to them by *De-ka-na-wi-deh*.

It is an important story: the basic principles of this ancient system of government being still in use by the Six Nations of Canada, with slight modifications in detail. It would not be wise nor yet safe to say how many centuries the system has been in practical use. The confederacy of the Five Nations, the people of the United Long House, has always impressed me with the fact that it existed a very long time before the Europeans reached the shores of America. Haiwatha (Ayonhwadha, commonly, but wrongly, called Hiawatha*) founded the confederacy; but the government of the confederacy is an exact counterpart of the system formulated by Dekanawideh probably ages before the era of Haiwatha.

How long the Mohawks existed in a deplorable condition before the Law-giver, whose name and memory even the Indians themselves have never heard—save a few, and those from the lips of the aged—it is beyond my province to conjecture. Lacking a suitable form of organisation, chaos, misery, and war threatened the annihilation of a great people. A long transitory period of "thinking" ensued, pondering how the lives of the people might be preserved. Malice in its most deadly form became rampant.

* Cf. Horatio Hale. *Iroquois Book of Rites* (s.v. "Condoling Council"): "*Hai, Hai*"—"Woe! Woe!"

Warriors ceased from their war-like expeditions to stay around and defend their women and children. That did not prove effective, for the families murdered one another with impunity. In the confusion the people became more infuriated than the beasts of the woods. Their minds darkened even in the glare of the hot sun; night served to awaken the horrors of bestial slaughter; children alone were spared. The earth and the beautiful world, with its abundance of fruit, foliage, streams of glistening waters, followed their allotted pace without murmur, summer and winter. The "People of the Flint," the mightiest in the land, alone amongst humanity were troubled and anxious.

Dekanawideh, the determined man, "setting his teeth together," as his name would indicate, vowing to master himself and save his people from destruction, wandered from the crowd, and reached the side of a smooth clear-running stream, transparent and full of fishes. He sat down, reclining on the sloping bank, gazing intently into the waters (*ohondon*), watching the fishes playing about in complete harmony: they had their sports and pastime which he did not understand. The sun's ray reflected its warmth upon him. He rose, dipping his hollowed hand into the water, drank freely, and sauntered quietly towards the spreading branches of a tree which stood near—a tall pine tree. He was deep in thought and did not notice, perched on the top-most point of the pinery, the Great White Eagle—a national totemic emblem. The tree was very high; no brave had yet been able to make and handle a bow and arrow which would send the arrow over the lofty position of the king of birds. Under the bird's keen eyed scouting protection Dekanawideh's "great idea" evolved itself into specific form. Drafting a plan as he sat upon the grass, trusting merely to his memory did not prove satisfactory.

Taking an eagle feather, placing it upon the ground, "That," he said, "shall represent the great idea." He placed many articles side by side to represent the "lesser ideas," the details of a great plan. These articles, he thought, would help to command attention to his "ideas" and receive consideration from his people.

Over and over again did he rearrange the various light articles which acted in lieu of letters. At last it was finished. His joy was great. He felt inclined to yell with delight. However, the Great White Eagle, perched on high, as if anticipating the result, gave a loud, triumphant scream. The first real American statesman was startled, and while he looked cautiously about him, a gust of wind playfully performed a whirlwind dance and circulated his great policy in all directions. The primitive record, though not the system, was lost.

A lively little woodpecker alighted on an old tattered hollow pine stump, mockingly singing his limited song, pecking for food between the notes. In a revengeful moment Dekanawideh grabbed his bow and arrow, and sent a swift arrow, pinning the bird to the stump. Leisurely he brought the bird and arrow down. Dekanawideh standing erect, bird in hand, carefully examined his plumage. Looking up to the lofty position occupied by the Great White Eagle, it drew from him a sigh of lofty admiration. "The Great Idea," said he, "will one day occupy a position in the affairs of men as lofty as the Great Eagle holds among the feathered kind." The incentive awakened and urged him on as if the "Ruler of All" had prompted Dekanawideh to finish the "task."

Once more he sat upon the grass, still examining the little bird's feathers. Suddenly there was a pause, a new discovery, another idea. Small white discs marked the feathers. The little white round marks would help to diffuse knowledge. One by one, feathers were plucked and stuck into the ground. In this manner the whole scheme was rehearsed, and securely tied the precious feathers together. A new era opened. Dekanawideh rose and slowly wandered back to his people, mingled with them awhile, then secretly laid his plan before the principal men and mothers of the nation. The scheme was approved by them, and on its presentation to the people it was adopted unanimously.

Such is the story handed down for ages, not from father to son, but from mother to children. I am reminded by my people that it has never been told to Europeans

The "great idea" involved the principle of placing the "mothers of the nation" in supreme authority, based on a triangular position; with points represented by three totemic shields, known variously as "clans or *gentes*."

This remarkable system has never been rightly understood, and I do not wonder at it. But you will perceive, as I go on, that the Mohawk women are intelligible after all. The national interest was invested in them for the good of the whole. They taught their own children, and men supported both mother and child. All the women were divided, by the *gens* system, into three totems. Each totem had a separate council. There was, however, a mutual agreement, all matters receiving the attention of the nation, in time of peace, in mutual unity: nothing was finally settled without unanimity.

In the women's totemic council, however, it was practically an informal affair, nominally presided over by an aged sensible woman of the *gens*.

The main subject and, probably, the only one which these female totemic councils reasonably discussed was the selection of the hereditary council, composed of seven hereditarily-named lords or masters. These "lordship" names, probably more correctly "titles," descended by right of inheritance through the women, who have claims upon the particular titles. But the women, although possessing such an extraordinary advantage, had neither voice nor presence in the council itself during session.

The Lords in Council spoke for the women, made laws for them; the women obeyed them.

No woman could have an interest in more than one title. It was impossible. The woman was not supposed to bear children from a father of the same totem as herself. Some women had a prior right in choosing a successor to office. The original "lordship titles," being seven in number, are as follow:—

- (1.) The Turtle *gens*: S'hadekariwadeh. Although this is the most important *gens*, the vested power in the individual suggests rather the kingly power than anything else. After the confederation of the Five Nations two names were added, in which Haiwatha's name, as an adopted Mohawk, now appears third in the list of titled ones or Lords of the Confederacy. It is possible that Dekarihoken may have been the original title and not S'hadekariwadeh.
- (2.) The Wolf *gens*: Shorenhowaneh, Deyonhehgwen, Ohrenbrekowah.
- (3.) The Bear *gens*: Dehanakarineh, Asdawenserontha, Shoskoharowaneh.

The Wolf and Bear Nihodidaroden (*gentes*) it will be seen possess an equal number of titles,—three each. This meant a sub-division of each *gens* into three distinct factions without any other or further addition of totemic divisions. There is no such a thing as a sub-*gens*. It is an understood custom that the sub-division of *gentes* gave to some women, heads of families, the right of ownership to one of the many titles. By this arrangement it followed that a female totemic council relegated the sole control of a named title exclusively to the said "owners of the said title." The owners of *Shorenhowaneh*, as an example, would have no voice in the title of *Deyonhehgwen*.

The owners within the *gens*, however, could "borrow" candidates from one another, so that virtually the warriors of the Wolf and Bear *gentes* were in a position to succeed to any one of the three titles. Regency and borrowing are entirely distinct.

There does not appear to be any limit to the number of owners. It is guided by the number of females in the family. Age takes first rank. It has always been against custom to consider candidates from among the young men. An owner, be she mother, grandmother, or great-grandmother by her right of inheritance would naturally choose her own blood relation for office in preference to others. It is, however, very clear that the candidate must possess qualifications in a superior degree to merit the attention of the women.

A great deal more might be said on this point of an internal tribal organisation, but let me briefly direct your attention to the council itself. From the opening of a council meeting begins the ceremonial part of the outward demeanour. The lords sit in council by *gentes* on a plan having three corners. The principal position in the council was occupied by the Turtle—the fountain of thought, goodness, and restricted authority. The Wolf occupied a position equivalent to that of the “opposition party.” The Bear watched the interest of all the people, keeping a careful traditional record of what transpired in these councils. It was his duty to open and close the council meeting in a becoming manner. He took no part in the debate. It was his duty to confirm or refer matters back to the council for reconsideration when he thought the interest of the people would be better served by doing so.

The lighting of a fire, possibly the mere removal of ashes from the embers of an undying “council-fire,” set the work of a council into motion. About this council-fire, let us draw three lines in a triangular manner; the first line, pole to pole; the other two lines pointing to, and meeting at, the west side of the council-fire. The Wolf sat to the north-east point of the triangle, also facing the fire. The Bear sat at the western point facing the east. The Turtle Lord sat at the south-east point of the triangle facing the fire. The presence of all the *gentes* formed the quorum. Then the speaker of the Bear Lords rose in his place and delivered a set address, beginning by referring with thankfulness to the Maker for opportunities enjoyed by them and their people. The speaker would urge the Lords in Council to exercise wisdom and patience in all their deliberations.

When he had finished the Turtle Lord would announce the business requiring the council's careful consideration. He himself would make known his own conclusions, whereon the “opposition party,” *i.e.*, the Wolf Lords, would immediately proceed to discuss the matter in hand in an undertone among themselves. When the “opposition party” reached an unanimous conclusion, the fact would be announced by their speaker. It might be that the view taken by the Wolf Lords would be totally at variance with the expressed conclusion of the Turtle Lord, or it might be a mere concurrence of views. Where there was a difference of opinion between the Turtle and the Wolf, the Bear would effect a compromise.

After the speaker of the Wolf had addressed his reply to the council, the Turtle Lord would ask the Bear Lords to give it their careful attention. The Bears on reaching a conclusion would announce the fact through their speaker to the council, whereupon the Turtle Lord would make the final announcement, the unanimous decision of the council, to the people of the nation. In this manner the whole transactions of the council were carried on in the most dignified, orderly, and confiding way. No Lord was allowed to address the council openly without first having obtained the sanction of his side of the council fire and of the council in general. As the Lords were the most easily approached class of the community, it is easy to understand the lack of antagonism between them and the people. They were called *Rodiyaner*, the good masters and lords.

As the sun sets in the west, the deliberations of the council are brought to a close, figuratively speaking, by drawing the ashes over the undying embers of the council-fire on the part of the Bear Lords.

There was a minor officer to the lords outside of the council in the person of a messenger, whose duties were directed by the lord himself. Messengers were sometimes promoted to the titular office, but owing to the practice of selecting older men to office, such a form was never made an absolute rule.

The men who had been guilty of murder, treason, and cruelty to women or children could never become titular lords. For the same offences, with the addition of disobedience, a lord could be removed from office by the council itself.

It should be mentioned that the candidates for office were chosen by the "owners" of certain titles, who, after agreeing upon a choice, presented the candidate to the general council for acceptance.

The council had a right to refuse or accept a candidate. Following on this power, maintained by the council itself, they also had the authority to make one of their own people serve in the council without a title.

We find, in the historical annals of times past, Mohawks holding and wielding great influence, who did not possess one of the titular names here mentioned. That is possible in a two-fold degree: firstly, because the council possessed authority to make a "life chief" of one who had shown great service to his people; secondly, since the leader, distinguished in times of war, maintained his influence over the people at the return of peace.

One peculiar feature of this system of government is the suspension of council authority during war. This is probably the cause why the hereditary system has not produced a single noted man from among their numbers. Dekanawideh himself would not allow his name to figure among the titles. There is not a class of people in America, or indeed in the world, who are more indifferent to the perpetuation of their individual memories, and still uphold an hereditary system, as tenaciously as do the Mohawks of the Grand River. Indian farmers of to-day, descendants of famous men and women, are absolutely careless whether their family tree is more important than that of the rest of the Indians about them. This does not arise from ignorance of the facts, but the belief and practice of extending equality to all seems to be at the root of the whole idea. No man or woman among them expects more glory than that which arises from a consciousness of having done a duty to the best of their individual ability.

Numerous ceremonies, observed at the present day, I have not touched; they are distinct from the subject in hand. I cannot, however, close without saying a word in regard to that admirable work by the late scholar, Horatio Hale, on *The Iroquois Book of Rites*. That work is only a part of the material preserved among this people; about whom the world has heard a great deal, though it knows so little of them.

The system of government which I have attempted in a feeble way to explain was also the system in vogue at the period when the Crown of England entered most solemnly into an alliance with it on defensive lines, when the British Empire was not so large as it is at the present moment. It is probably just as well to emphasize that the Mohawks have never violated a pledge, and their fidelity to the Crown is no less real to-day than in the days long since past by the snows of time. "The proud imperial Mohawks" are not a dying but a living race, eagerly waiting the opportunities to employ talent, which has lain dormant for some generations. May the hour be no longer stayed! I have said so: *Ne Ne I-ih Wachiron*. J. O. BRANT-SERO.

Spiritualism.

Lang.

Anthropology and Superstition. By Andrew Lang. (Cf. MAN, 1901. 3.)

135

In the *Journal of the Anthropological Institute*, Volume XXXI., or rather in the Appendix, MAN, No. 3, occurs a remark of Mr. Hartland's to this effect: "The question raised . . . as to the validity and import of certain phenomena, 'vulgarly called 'spiritualistic,' is hardly one for the Anthropological Institute." The reference is to certain attempts of my own to compare savage beliefs or superstitions with their analogues, perhaps survivals, in contemporary European and American society. Now the Anthropological Institute may, of course, draw the line where it pleases; but is it the case that such a comparison as I tried to institute, "is hardly one for" the science of anthropology? I merely follow the lead of Bastian in his *Ueber psychische Beobachtungen bei Naturvölkern* (Leipzig, 1890). Bastian, I believe, is a recognised authority in anthropology, and he deigned to glance, in the tract cited, at

hypnotic methods and hypnotic phenomena among the backward races. My own sketch also dealt, among other things, with many phenomena of automatism among the savage and the civilised, whose methods and results are curiously analogous. In both the civilised and savage instances, these practices are usually involved in superstition, "spiritualism" and other fallacies, or apparent fallacies. But even the Anthropological Institute, in the latest number of the *Journal*, devotes attention to superstitions. In certain cases, hypnotic and automatic, the superstitions are unscientific hypotheses about facts in human nature. I cannot see, I confess, why real or alleged phenomena of human nature and "their validity and import" are (alone among the phenomena of human nature) outside the sphere of a science which neglects *nihil humanum*, and has given much attention to superstition, the unscientific interpretation of these phenomena. But, though I cannot imagine any reason why anthropology should neglect anything anthropological, I can see many reasons, I admit, for the idea that the topic "is hardly" "one for the Anthropological Institute." One reason is that the phenomena "are" "vulgarly called spiritualistic." Yet even this does not prevent the publications of the Institute from treating of savage beliefs of a "spiritualistic" character. So perhaps the reason is not so excellent as I supposed.

A. LANG.

Torres Strait.

Rivers.

On the Functions of the Maternal Uncle in Torres Strait. By W. H. R. Rivers, M.D. To be published in full in the Report of the Cambridge Anthro-
 pological Expedition to Torres Strait.

136

In the western tribes of Torres Strait descent is at the present time strictly paternal, and yet customs exist among these people which show that in some respects the relationship between maternal uncle and nephew is regarded as nearer than that between father and son. The system of kinship is of the kind known as "classificatory," and the customs to be described apply not only to the brothers of the mother, in the strict sense, but to all those males of the clan of the same generation as the mother whom the latter would call brother.

A man will cease fighting at once when told to do so by his maternal uncle. The power of the uncle is so great that a fight between the natives of two hostile islands (Mabuiag and Moa) might be stopped if a man on one side saw his sister's son among his enemies. This power of stopping a fight is not possessed to the same extent by the father or mother, and a man may continue to fight even after the father or mother has given certain indications of the nearness of the bond between them and the son. The maternal uncle, on the other hand, stops a fight by a mere word. The brother-in-law (*imi*) has also the power of stopping a fight, but in this case it is the duty of the man who has been stopped to make a present to the brother-in-law. No such present is made to the uncle.

Another indication of the closeness of the relationship between maternal uncle and nephew is that the latter may take, lose, spoil, or destroy anything belonging to his uncle (even a new canoe, probably the most valuable possession a man can have) without a word of reproach from the latter. I was told that, even if the nephew was quite a small boy, he could do what he liked in his uncle's house—could break or spoil any of his uncle's property, and the uncle would say nothing.

As a boy grew up he went about more with his uncle than with his father, and I was told that he cared more for his uncle. At the ceremonies connected with the initiation of the boy into manhood it was the maternal uncles who had especial care and complete control of the boy, and imparted to him the traditions and institutions of the tribe. When the boy married the father provided the necessary presents; but the actual payment was made by the maternal uncle, to whom the presents were given by the boy's father.

One point of interest in these customs is that they are found in a tribe in which descent is now paternal, and must probably be regarded as vestiges of a previous condition in which descent was maternal, and the brothers of the mother were regarded as nearer kin than the father.

Another point of more special interest is to be found in the similarity between one of these customs and the "vasu" institution of Fiji. This institution which has been spoken of as the "keynote of Fijian despotism," may be regarded as an extreme development of the custom which in Torres Strait permits a nephew to take anything belonging to his maternal uncle. In Fiji this custom has grown to such an extent that the nephew of a king may be "vasu" to all his uncle's subjects, and may with impunity, despoil his uncle's subjects of all their most valued possessions. W. H. R. RIVERS.

Torres Strait.

Rivers.

On the Functions of the Son-in-Law and Brother-in-Law in Torres Strait.
By W. H. R. Rivers, M.D. To be published in full with the preceding paper.

137

In both the eastern and western tribes of Torres Strait, as in so many parts of the world, a man is not allowed to utter the names of his wife's relations. He does not speak to his father-in-law, and carries out any necessary communication through his wife. If, for any reason, it should become necessary to speak to his father-in-law, he talks in a low voice and mild manner.

In the western tribe this disability is associated with certain duties and privileges. The brother-in-law has the power of stopping a fight, but apparently not to so marked an extent as in the case of the maternal uncle.

When a man dies, the duty of looking after the body and the mourners falls largely on the brother-in-law (*imi*). If the man has died away from home it is the duty of the "imi" to announce the death to the widow and brothers of the deceased, and the "imi" gives the signal for the crying—"keening"—to commence. He prepares the body and carries it to the grave. He stops the crying, gives food to the mourners, and fills the pipe of the brother of the dead man. If no brother-in-law is present these duties devolve on the father-in-law (*ira*), or, if no "ira" is present, on the sister-in-law (*ngaubat*). Owing, however, to the large number of brothers-in-law provided by the classificatory system of kinship, this rarely happens.

The brother-in-law has also definite duties in connection with fishing, and has a definite place in the fore part of the canoe. It is his duty to hoist the sail, to heave the anchor, to bale out water, to light the fire and prepare food, and to spear the dugong or turtle. He has, in fact, to do all the hard work, while the owner or captain of the boat has little to do beyond giving orders. In special kinds of fishing, as in that in which the sucking fish is used—of which Dr. Haddon has given an account—certain of the operations are carried out by the brother-in-law.

At a dance a man does not wear his own mask (*kra*) but that of his brother-in-law.

It seems probable that these customs may be regarded as vestiges of a condition which does not now exist in Torres Strait, but is found in many parts of the world, viz., a condition in which a man lives with and serves the family of his wife.

These customs, and those connected with the maternal uncle, agree in pointing to the existence, at some time, in Torres Strait of a stage in the development of the family in which the husband was a relatively unimportant appendage, and the head of the family was the brother of the wife; a stage of development which is still to be found in some parts of the world, as among the Seri Indians, recently investigated by McGee.

W. H. R. RIVERS.

Greece: Prehistoric.

Evans.

"*The Oldest Civilisation of Greece: Mr. Hall and 'H.'*" By Arthur J. Evans, LL.D., F.R.S. (Cf. MAN, 1901. 130.)

138

In an article on *Mycenæan Cyprus as illustrated by the British Museum Finds*, published in last year's Journal of the Institute, I ventured to hope that I had stripped the last rags off the theory that brought down Mycenæan civilisation in Cyprus to the eighth or even the seventh century B.C. The system by which the Bronze Age pins of Cyprus are compared with those on the François vase, by which typical Cyprian Mycenæan cylinders of, say, the fourteenth century B.C. are described as "Phœnician" imports of eight centuries later date, and Vapheio vases and Ialysos cups made to survive to the "Age of the Tyrants," might hardly seem to require refutation. In order to satisfy the views put forward in the British Museum publication referred to, "it would be necessary," as I pointed out, "to suppose that the Bronze Age of Cyprus" so far from reaching its term somewhat earlier than that of Greece or Italy, came "down five centuries later to the borders of the period of fully-developed classical art, while the long centuries of the iron-using, geometrical period are either left out of account or a Mycenæan Bronze Age is interposed between them and classical times."

Whatever might have been thought a few years since as to the possible isolated survivals of pure Mycenæan culture, the mass of evidence now before us precludes such an hypothesis. The continuous course of civilisation in Cyprus and its characteristic early Iron-Age products have now been illustrated in detail by Mr. Myres in his catalogue of the Cyprus Museum. Nor was it ever a question of the survival of some changed form of civilisation in the island to which perhaps the name of "Sub-Mycenæan" might still with more or less appropriateness be applied. It will be seen, from a reference to the British Museum publication above cited, that its authors claimed (on the strength of Egyptian evidence of which Professor Petrie had already made mine-cement) to bring down the ceramic and other products of the best days of Mycenæ to the borders of the period of fully-developed classical art. The old tag about the exceptionally conservative character of Cypriote culture is constantly appealed to. Conservative, indeed, to render possible the continued manufacture of artistic products for 800 years in a practically unchanged form!

But it seems that it was a vain conceit on my part to suppose that my detailed exposure of this impossible system had reached those for whom it was most intended. Mr. H. R. Hall in his recently published work on the *Oldest Civilisation in Greece* accepts the heresies regarding the Mycenæan chronology in Cyprus *en bloc*, and, though this might have been thought to be his special business, suppresses even a mention of Professor Petrie's successful demolition of the alleged Egyptian evidence. Nay, more, the detailed criticism of the Journal has not yet penetrated the pages of MAN, and a notice of Mr. Hall's book in the last number signed "H" not only endorses his pronouncement, but goes beyond it to express astonishment that archæologists should exist "who shut their eyes to the fact that Mycenæan remains in Cyprus last down to the eighth century (or possibly even later)."

We must, however, be thankful for small mercies, and it is satisfactory to find that the system by which the central chronological point of the Mycenæan civilisation is referred to the fifteenth or fourteenth century B.C., which elsewhere has been accepted for years, should at last find an advocate in one at least of the Departments of our National Antiquities. The fact might still have been mentioned, however, that the evidence for the early dating of Mycenæan culture, based on the correspondence between its products and the offerings of the Keft chieftains to Thothmes III., had been pointed out by Steindorff some ten years since. Mr. Hall, indeed, apart from his impossible conclusions regarding Cyprus, brings down the general date of

Mycenæan culture far too low, and adduces on behalf of this view the fine Bügelkanne said to have been found in the coffin of a grandson of Pinetchem I., who died some time in the tenth century. As these relics are in Mr. Hall's department of the British Museum we might at least have expected a more cautious verdict; for they have been shown by Professor Petrie to form part of a bogus find of the class which those who have to do with Arab and other dealers are very familiar. The objects, said to have been found together, appear, in fact, to range in date from about 2600 to 300 B.C. Such at least is the result of Professor Petrie's published analysis,* and it is difficult to understand by what pontifical authority Mr. Hall can claim (as he does in his book) to exercise the right of completely ignoring such criticism.

It may also be pointed out that Mr. Hall's references to the early civilisation of Crete and its connexions with Egypt are generally misleading. I had myself suggested a relationship between certain rude pictorial figures on a class of early cylinders and a prism seal found in Egypt and certain types on an early class of Cretan seal-stones, also accompanied by the prism form. The types for the most part are not ordinary hieroglyphics, and include ibexes or goats with two heads and a single body, a hare-headed man, and possibly one with horns, and the comparisons are tabulated for what they are worth. Mr. Hall thinks the horns of the man are the rudely-drawn feathers of the Egyptian hieroglyph for archer, which may or may not be the case, but his conclusion "that the supposed connexion with Crete" therefore disappears is singularly illogical. Half the creations of barbaric art result from misunderstood copying. The other signs on the Karnak prism he describes as "merely ordinary Egyptian hieroglyphs." It does not require a very profound knowledge of Egyptian hieroglyphics to know that this is a strange perversion of fact.

So far as direct connexion between Crete and Twelfth Dynasty Egypt is concerned the evidence is as conclusive as it can possibly be. I have myself put together a table of Twelfth Dynasty scarab designs and their contemporary copies on Cretan seal-stones which has been generally accepted as carrying conviction. The argument so freely used, that scarabs themselves prove nothing as they may be later importations, is here beside the mark, for men do not imitate the past but the contemporary art of their neighbours. The spiral system,—unknown to the earlier, neolithic population of the island,—now appears in a fully developed form taken over, like the stone vases with which it is associated, from Twelfth Dynasty originals. The beautiful pre-Mycenæan painted pottery of Crete finds its way at the same time to Egypt. The evidence of direct relations between Crete and the Nile Valley at this time is overwhelming. But in the teeth of it all, and notwithstanding the fact that neither the seals, nor the spirals, nor the vases are found in Cyprus, Mr. Hall still seeks to find the only intercourse between Crete and Egypt "by land or sea along the Asiatic coast *viâ* Cyprus." With regard to the local topography of Crete, Mr. Hall might improve his knowledge with advantage. In that case he would certainly cease to write of "Praistos" and the "Dictean Cave on Mount Ida."

Nor was it really necessary that Mr. Hall—with less than a thousandth part of the evidence before his eyes—should cast doubts as to the statement made in my last report on the Knossos excavations, that the Cretan linear script reads from left to right. I can only repeat that the statement is absolutely exact. Elsewhere I had been at special pains to point out that the conventionalised, pictographic, or fully developed "hieroglyphic" script of Crete is the product of the Mycenæan age, and lasts, indeed, to quite late Mycenæan times. Mr. Hall now makes this a suggestion of his own as if he were setting my conclusions right. Throughout the book, indeed, we are continually confronted by what appear to be judicial corrections of

* *The Relations of Egypt and Early Europe*. Trans. R.S.L., XIX., p. 73-1 (= p. 16 of the paper).

authors' statements by Mr. Hall, but which are in reality the conclusions of the writer that he is referring to. A reference is given, for instance, to a book of mine, where mention is made of the non-Hellenic inscription found at Prasos, in such a way as to lead the reader to suppose that I have advocated the Semitic origin of the Eteoerretans. "But," continues Mr. Hall, in his heaviest judicial style, "we may be justified in thinking it more probable that the Eteoerretans belonged to the same stock as the other Pelasgian tribes in their neighbourhood than that they were Semites." This was really my own conclusion on the pages referred to by Mr. Hall. So, again, after entering a judicial caveat against the view put forward in my monograph on Mycenaean tree and pillar cult, that Mycenaean worship was predominantly aniconic,—a view which elsewhere, both on the Continent and in this country, has received general adhesion,—Mr. Hall adds a further corrective paragraph of his own to show that this cult need not be Semitic. "The similar cults of Canaan," he writes, "were probably taken over by the Semites from the pre-Semitic inhabitants, who probably belonged to the same stock as the pre-Aryan Greeks." This is simply repeating (in a crude and incorrect form, it is true) what had been specially insisted on in the work that Mr. Hall is apparently controverting.

Mr. Hall's book contains much good material, laboriously put together, combined with many fresh and welcome suggestions, especially as regards the barbaric invaders of Egypt and the original Philistine stock. A good deal of it shows a quality of real research which cannot be too highly commended. But it is marred by the continual effort to sit in judgment on matters that are really beyond the author's competence. Dogmatic pronouncements, moreover, as in the case of the alleged reference to the Ionians on the Tell-el-Amarna tablets, of the cylinders from early Cypriote tombs, and of the clay figures from Nippur, often stand in the place of arguments. Professor Sayce is corrected like a schoolboy on a point upon which he has still some very conclusive arguments to bring to bear. Professor Hilprecht's personal evidence as to the circumstances of his discovery of the clay figures is brushed aside as "quite impossible." Of the treatment accorded to Professor Petrie samples have already been given. It must be added that some of the most irritating features of Mr. Hall's book are due to an inherent want of lucidity and an imperfect mastery of English composition, which makes it almost impossible to know whether at a given point he is expressing his own opinion or whether he is quoting that of another writer.

ARTHUR J. EVANS.

Greece: Prehistoric.

Myres.

Note on Mycenaean Chronology. By John L. Myres (*Cf. MAN*, 1901. 130.)

139

A phrase in the recent review of Mr. Hall's *Earliest Civilisation of Greece* (*MAN*, 1901. 130) seems to indicate that the writer is not fully aware of the state of the case. "We do not understand," he says, "how archaeologists can shut their eyes to the fact that Mycenaean remains in Cyprus last down to the eighth century B.C. (possibly even later)." This is not a fair statement of the case. At present the only "fact" known is that certain officials of the Greek and Roman Antiquity Department of the British Museum have stated this opinion in an official publication. No serious student, however, outside the Museum, has seen his way to accept their view either before or since; and the Museum, though repeatedly challenged to publish its evidence, still keeps silence on the essential points of "fact."

On the first announcement of the Museum's inferences from its excavations at Episkopi (quoted in *Academy*, January 11, 1896) I pointed out (*ib.* February 1, 1896) that the announcement was both self-contradictory in form and inconclusive in substance, and that before the new view could be accepted it must be supported by a proper statement of the evidence. To this note no reply has ever appeared.

Not long after, Professor Flinders Petrie went into this whole question of date in detail (*Trans. Roy. Soc. Lit.*, XIX. (1897), p. 73 ff.) and corrected the misapprehension

into which the officials of the Department of Greek and Roman Antiquities appeared to have fallen as to the date of the Egyptian scarab on which half of their case rested. Again no reply. In the official publication, *Excavations in Cyprus*, which appeared shortly afterwards, Professor Petrie's article is ignored altogether, and the pronouncement of an anonymous expert is accepted as final.

Still more recently Mr. Arthur Evans, in reviewing once more the Cypriote evidence on which the Museum bases its view (*Journ. Anthr. Inst.*, XXX. (1900), p. 199 ff.) has pointed out that the "Phœnician cylinder" on which the other half of the Museum's case rests is neither figured at all in the official publication, nor even described in the text in such a way as to be identifiable. Still no answer; and no publication, as yet, of the cylinder in question.

Under these circumstances it cannot be said that archæologists outside the British Museum have "shut their eyes" to anything. On the contrary, they have their eyes very wide open indeed in the direction of the British Museum, and whenever either the writer of the phrase I have quoted or the officials in charge of the Cypriote finds shall produce some "facts" for them to see, they will probably succeed in seeing them.

J. L. MYRES.

REVIEWS.

Folklore.

Sébillot.

Le Folklore des Pêcheurs. By Paul Sébillot. Paris: Maisonneuve, 1901. 12mo. Pp. xii, 389. Price 5 francs.

140

The forty-third volume of *Les Littératures Populaires* which we owe to that indefatigable folklorist, M. Sébillot, is a singularly interesting volume. There are probably few modes of life more calculated to promote the survival of traditional customs than that of the fisher-folk. In England, and still more in other parts of Europe, they live their own lives and are untouched by civilisation. They still form, as it were, an exclusive caste, to which we find an analogue among some of the whale-fishing peoples of Behring Sea.

The chapters of M. Sébillot's book deal with the life of the fisherman from his birth to his death, with his house, his patron saints, and his religious customs. The second book is devoted to the boats, omens, and the various observances believed to be necessary for success; chapters are devoted to the freshwater fishermen and to the fishermen of Newfoundland and Iceland. The third book gives a sketch of the legends of the fishermen of all nations.

It is a little unfortunate for those who want to use the book as well as be amused by it that there is no index provided. Surely this concession to the serious student would have done no one any harm.

N. W. T.

Egypt.

Niebuhr.

The Tell-el-Amarna Period. By Carl Niebuhr. No. II. of "The Ancient East" Series. Price 1s.

141

The second volume of the series, dealing as it does with purely historical questions, calls for no extended notice here. On the whole the epoch of the history of Egypt and Western Asia, known as the "Tell-el-Amarna" period (c. 1450-1400 B.C.; the date 1370 given by Mr. Niebuhr for the death of Amenhetep IV. (Akhenaten) is too late) is capably sketched by the author, who, however, of course labours under the difficulty always present when small books of this kind are concerned—the difficulty of clearly indicating when the evidence on which he bases his conclusions is absolutely certain and unquestioned, and when it is not. A wrong impression is given by a mistake which occurs throughout the book: if the *H* is not used it should be replaced by *Kh*, never by simple *H*. The names "Hani," "Vanhamu," &c., which occur in this book are wrongly spelt; if *H* was not available they should have been spelt Khani, Vankhamu. H. H.

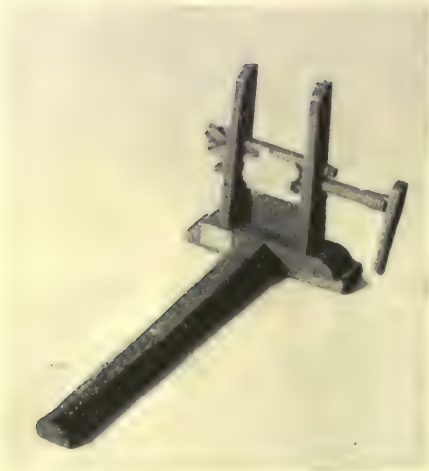


FIG. 1.—COTTON-MILL OR GIN (FOR EXTRACTING THE SEEDS FROM THE COTTON).

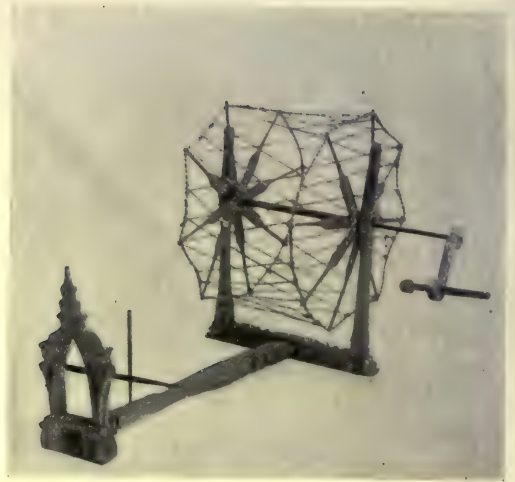


FIG. 4.—SPINNING-WHEEL (FOR COTTON).

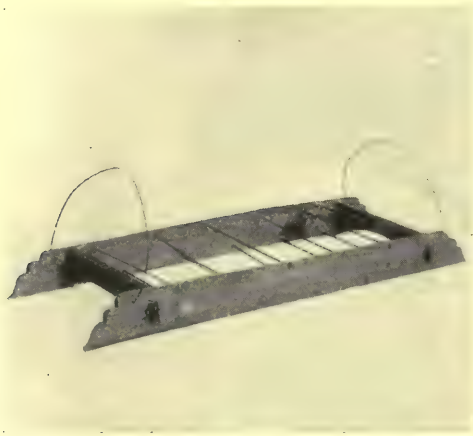


FIG. 2.—SPOOL-LADDER OR SPOOL-RACK (WHENCE WARP-THREADS ARE DRAWN DOWN TOWARDS WARP-PEGS PLACED BELOW THEM).



FIG. 5.—FRAME USED FOR "TYING" PROCESS.



FIG. 3.—PEGS FOR WARP-LAYING.

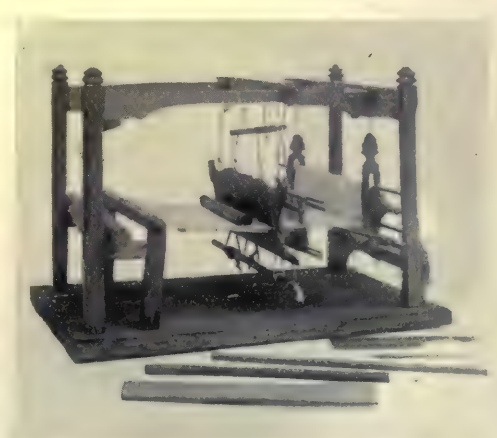


FIG. 6.—MALAY LOOM (KELANTAN TYPE).

ORIGINAL ARTICLES.

Malay Peninsula.

With Plate M.

Skeat.

Notes on the Ethnography of the Malay Peninsula. Abstract of part of the Report on Mr. W. W. Skeat's Expedition presented to the British Association at Glasgow, September 17, 1901. 142

The Report contained also a statement of the zoological botanical, and geological results of the expedition, and will be printed in full in *Proc. Brit. Assoc.*, 1901.

The Malay Peninsula, lying midway between the two most densely-populated countries in the world (India and China), is, strangely enough, very sparsely populated. The climate is tropical (Singapore being only about one and a half degrees from the equator), the atmosphere heavily charged with moisture, the interior of the country (except where colonized) is mountainous and covered with dense jungle, the trees reaching a height of nearly 200 feet in many places. The total volume of trade in 1900 was about £51,000,000; with Great Britain alone about £3,000,000. The most important industry is that of tin-mining, the Malay region producing two-thirds of the world's tin supply. The natives are Mahomedan Malays, now often swamped by Chinese and other aliens in the western towns, whilst in the jungle are to be found scattered tribes of at least two aboriginal races, which are entirely distinct from the Malay or any other of the immigrating elements.

In addition to the British colonial settlements of Singapore, Malacca, and Penang, there is a British Protectorate over the federated states of Perak, Selangor, Negri Sembilan, and Pahang. At the southern end of the peninsula lies the independent state of Johore. The remainder of the peninsula, which is under Siamese influence, includes the area traversed by our expedition; it consists of the states of Patani (now divided into seven districts), Kelantan, and Trengganu, with one or two small districts north of Patani—e.g., Singora and Patalung.

After a short stay at Bangkok, during which the chief places of interest were visited, including the magnificent royal palace, the expedition proceeded by sea to Singora and there started work by exploring the shores of the Inland Sea. The next place visited was Patani, which lies on a river of that name, up which we proceeded in the curious river-boats there used for up-stream traffic to a place called Biserat, whence we worked our way through the southern states and finally proceeded by way of Singapore to Penang and Kedah. The chief town of Kedah, which is called Alor Star, lies a short way up the Kedah river. Starting from this town I proceeded for several days' journey inland till the far interior of the state was reached, crossing on the way a vast plain planted with rice, many miles in extent, and passing between the two finest mountains of Kedah, viz., Kedah Peak (called Gunung Jerei by the Malays) and Bukit Perak, which means the Silver Hill. Some of the scenery in the interior of Kedah was very fine; it was for the most part hilly, and travelling was effected by elephant, frequently over the roughest jungle-tracks.

There are on the east coast two sharply-contrasted racial types, but as the conclusions of Messrs. Duckworth and Laidlaw (the latter of whom took the measurements and the former is largely helping to work them out) are not yet fully published (cf. *Proc. Brit. Assoc.*, 1900, Bradford, p. 909) it is impossible to go into this question now, and all that I will say is that the difference between the two is to be seen, not only in their features but in their build and stature, which in the taller race approaches that of the Maori; the shorter race is undoubtedly Malay, the taller most probably Indonesian.

The Patani Malays have in many cases some infusion of Siamese blood, of which there may also be some slight traces among the coast-dwellers of the sister state of Kelantan, but from this element Trengganu appears to be practically free. Our own men were for the most part Malays from the west coast state of Selangor, but included

also a couple of Patani Malays, a Malay from Sumatra, a couple of Trengganu Malays, and a Malay from Kedah.

The central building of a Malay village is naturally the mosque, in proximity to which the dead were usually buried. The gravestones for men and women are of different shapes, and are easily distinguishable.

The ordinary house of a respectable Malay is raised upon posts (like the pile-dwellings of Switzerland), is thatched with the



leaf of a low-growing palm called "Nipah" (*Nipa fruticans*) and possesses beautifully decorative screens in place of outside walls, which are made by weaving into the required pattern long coloured slips of bamboo. The patterns are usually geometrical, but the border of one of these screens at Kota Bharu in Kelantan represented a snake chasing a fish. The patterns of the mats made up-country were also frequently of most beautiful workmanship. Other objects which were frequently well decorated were the indispensable Malay

coconut scraper, which was sometimes carved so as to represent some such animal as a rhinoceros, bear, or tiger, and sometimes a man prostrating himself in prayer.

The helms of axes or hatchets were frequently carved to represent a human face; in some cases even the teeth being visible. This face was said to represent that of a demon (or "Bhota") and recalls some Polynesian types of ornament.

Moulds for small cakes (or perhaps, I should rather say, fancy biscuits) were also frequently of most beautiful workmanship, the objects represented being elephants, buffaloes, bullocks, horses, rams, fish, tortoises, and weapons such as daggers, axes, and guns.

The pottery of Kedah was very finely executed, the pots being thrown on a wheel and the patterns stamped or painted, or even (in the better class of work) drawn by hand with a pointed stick before firing.

One of the most important industries on the east coast was that of fishing. Fish were caught not unfrequently by hand alone, as well as by lines (occasionally with most ingenious self-acting rods), traps, fish-fences, nets, &c. There is much that is interesting about the Malay casting-net, the ingenious method of making the chains for which was explained by Mr. Rosenhain at last year's British Association (*Proc. Brit. Assoc.*, 1900, Bradford, p. 906; cf. *Journ. Anthr. Inst.*, XXXI.). The twine used for making these nets is stretched upon an ingenious kind of rack which keeps it taut while it is being sized and brushed down with a brush made from the fruit of the Nipah palm.

Mr. Rosenhain at the same time explained several interesting points about other forms of Malay metalwork, including the methods employed by the Malay ironsmith in manufacturing the damasked kris or dagger blades so much admired by the Malays, as well as the methods of the coppersmith, whose moulds are made by building up several layers of fine clay and sand, &c., both inside and outside a thin core of wax, the latter of which is an exact full size model of the required vessel. A small vent-hole being left in the bottom of the mould, it is then deposited on two sticks over a basin of water, and some hot embers being placed inside it the wax core of the mould soon melts and

runs out into the water, leaving a hollow into which the molten metal is poured. The apparatus used by the goldsmith appears to more nearly approach Indian methods than those of his fellow-craftsmen who work up the metals of lesser value.

The main point of interest about the cloth-making methods observed on the east coast was that neither in the form of method of using the cotton-gin (Plate M. 1) (for separating the seeds from the raw cotton), the scutching-bow the rolling-board and pin, nor the spinning-wheel itself (M. 4), does any notable departure from Indian methods take place. When once this point is reached, however, considerable differences manifest themselves, as, for instance, in the shuttles and in the Malay method of warp-laying, according to which the spools of variously-coloured thread are carried in a horizontal frame or rack (M. 2,), which is suspended from the rafters at about five feet from the ground. The thread of each separate spool is drawn down as required, and wound in and out round a series of long wooden pegs fixed into a wooden board (M. 3). In an old book about Madras and Mysore, by E. Hoole (London, 1844), there are several good illustrations of weaving apparatus, including one of the frame with pegs, though, unfortunately, the author is "unable to explain the precise method of using it."

The only other special point to which I would now call attention is the method of preparing the warp-threads by stretching them on a frame (M. 5), and tying them round at intervals to form the pattern, the parts thus tied being, of course, protected from the dye into which the warp-threads are then dipped. This method differs, if I remember rightly, from the method observed by Dr. Haddon in Borneo, in the fact that it is the *warp*-threads that are tied; in principle it is, however, of course the same. The loom (M. 6) is a horizontal one, and is almost invariably placed under shelter just outside the house, where the women, who are the only weavers, may frequently be seen at work.

Another widespread industry was the manufacture of jaggery or coconut-sugar. The sap is drawn off by cutting off the tip of the fleshy axis of the blossom-shoot of the palm, when the sap distils into a bamboo vessel (internode) arranged to intercept it. It is then taken home and boiled continuously in a large copper until it is sufficiently thickened, when it is poured off into small, shallow, circular moulds arranged on a board, forming when solid a small round cake of a toffee-like substance, which is largely used by the Malays for cooking purposes.

Another and still more important industry was, of course, rice growing, the rice being (in Kedah) cut with reaping-knives or sickles of peculiar shape, and threshed by striking the heads of each sheaf of rice against the rungs of a small ladder placed against the side of a tub, after which it was drawn off the field on sledges drawn by bullocks.

We saw in Patani some notable and striking Malay ceremonies, among them being a royal wedding between the sister of the Raja Muda of Patani and the young Raja Muda of Kelantan.

An equally interesting ceremony was one which Mr. D. T. Gwynne-Vaughan and I witnessed at the mouth of the Patani river, at which the candidates for circumcision were paraded with great pomp and ceremony. Their heads being shaven, they were mounted on the shoulders of men who were for the occasion nicknamed elephants, and



who carried them to the threshold of the house in which the ceremony was to take place, whence, however, they were thrice driven back before they were allowed to enter the house until the demons were believed to have been thoroughly expelled from them by an old magician who stood at the top of the steps and to the accompaniment of many incantations loosed a slip-knot in front of each of the candidates' foreheads. During the procession a curious collection of rice-cakes, orange, white and purple, which was called "the soul rice," was carried in front of the candidates, a number of women accompanying the procession and carrying long spirally-decorated tapers which were said to be regarded as "make-believe" krisses (the man's emblem).

Civilisation is making great strides in these states, but it has not yet entirely swept away the lingering traces of the old barbaric law which imprisoned human beings in cages and under conditions that would have been unfit for beasts, and tortured and mutilated them until death mercifully brought them a release. Still it is an undoubted fact that matters are improving, and we may be permitted to hope that scenes of this sort will before long, as in Europe, retain an antiquarian interest only, and that the last gaol-cage in Malaya may be abolished, no less than the custom of mutilating thieves by lopping off their hands and feet.

To conclude with a lighter theme, some of our most exciting and diverting experiences were gained in attending the performances of the local medicine men or magicians, spiritualistic *séances*, such as that of the Fish-Trap dance, &c., &c. A performance at Biserat by a local Malay conjuror, named Golek or (more familiarly) Awang the Big, was one of the most amusing things I have seen, the conjuror being a well-known local character and a born clown, who first made our acquaintance by bringing in zoological specimens to our quarters. Awang the Big commenced by performing a most impressive sort of juju, which enabled him (as he explained) to carry a wooden rice-mortar weighing from 30 to 50 pounds about in his teeth for a considerable time, and then cast it from him with a jerk of the head. He then entered a charmed enclosure, which was marked off from the spectators by a black and white cord, and there lying down upon his back, supported the mortar upon his belly whilst four men vigorously pounded the rice inside it, the pounding (which he probably hardly felt) producing the most extraordinary contortions in Awang's visage. There was no great intrinsic difficulty in this performance, but it was, nevertheless, as a burlesque of conjuring, irresistibly comic owing to Awang the Big's grand air, which was greatly enhanced by his solemn assertion that even royalty in the shape of the local rajas could only entreat, but could not command, his services.

It is not necessary to argue, on account of their occasional lapses into savagery, that the Malays are an essentially barbarous people. That is very far from being the case, and, indeed, the unanimous verdict is in the opposite sense to such a conclusion. The Malays are essentially a soft-mannered people, and that none the less for the fact that, like many other soft-mannered people, they are capable of doing desperate acts. The better class of them, *i.e.*, the forest-dwellers as distinct from the town-dwellers, are not only often first-rate woodsmen but naturally gentlemen, and most companionable, fond of their home and family, loyal to a fault towards their natural chiefs, honest as any of our own peasantry, keenly alive to a sense of their own honour. Desirable, as it undoubtedly is, that the *coup de grace* should be given to such ebullitions of savagedom, as some that I have already referred to and others to which I might refer, I do not believe it would necessarily improve the race to force it neck and crop into the straight jacket of our own civilisation. Much might, indeed, be gained, but more would infallibly be lost thereby through the withdrawal of the opportunity for character-training, which is the most precious possession of a free race.

W. W. SKEAT.

Australia.**Spencer.**

The Australian Ethnological Expedition; part of a Letter received from **143**
Professor Baldwin Spencer. Communicated by J. Edge-Partington.

Writing from Barrow Creek, under date June 17, 1901, Professor Baldwin Spencer gives the following account of his work:—

"On the whole we are having a very good time though travelling is rather rough and horribly monotonous in this part of the globe, which is about the last place created, and there were no picturesque features left. We have been riding for a week or two through a kind of broad road cut through the mulga scrub so as to make a clearing for the telegraph line. From the Alice to here is just about 200 miles and during the whole time we spent on the road we only saw two solitary blacks. The whole country has been stricken with a great drought, which has affected the natives as well as the plants and beasts. However, here we have a good number of Kaitish natives gathered together and are doing some work amongst them. At Alice Springs we got hold of some good things, and the British Museum shall certainly be remembered when we get back, but much will depend upon how many of our things get lost on the road. The loot which we have got during the past few days, and which is now lying in a heap close to where I am writing, would make your mouth water—Churinga spears, big and little bean-tree pitchis, shields, sacred hair girdles, knives, &c. Further north we ought to get much better things. Two hundred miles ahead the natives are already waiting for us with plenty of stone knives and hatchets. The difficult things to get are the sacred implements. The only way to secure these is to go and rummage about in their camps where they keep them concealed in the bushes out of which they build their miamias.

"As far as the Alice we carried a cinematograph with us and spent some time there recording sacred ceremonies, but I am afraid that they are not a great success as it is not easy to fix the instrument so as to include the whole performance. However, they will be better than nothing. We also had a phonograph and got twenty-four good cylinders with records of corroboree songs, initiation songs, and so on. These are decidedly good. We shall not get much that is new in the way of implements until we get north, but I have hopes of securing interesting things there. Near to Tennant's Creek is the great place for making stone knives and hatchets, and I hope to secure several good series of these in different stages of development.

"When we have finished here we go north for 200 miles and intend to spend two months among the Warramunga tribe. Then we make north again for another 200 miles, and then probably work out north-east towards the Gulf of Carpentaria, on to the Macarthur River. We intended making out west on to the Daly River, but we shall not have time to do this before the summer rains come on and with them heavy floods, which if we happen to be caught in them will prevent our moving about for two or three months.

"This letter goes south by a stray wanderer who has just come in here. Goodness knows when you will get it. Our next post office lies 700 miles ahead of us. There are no such things as papers here and we know nothing of the world."

Anthropometry.**Risley.**

On an Improved Method of Measuring the Vertical Proportions of the Head. **144**
 By H. H. Risley, C.S.I., Director of Ethnography for India.

It is, I believe, the experience of most observers that the measurement of the vertical dimensions of the head, commonly called "projections," on the living subject presents some material difficulties. After several experiments I believe that I have discovered a simple method of overcoming these difficulties, which I venture to describe,

in the hope that it may be of use to anthropologists. It has been tried in India on a large scale with marked success.

The measurements are taken with the graduated T-square (*Equerre céphalométrique*) and the smaller steel sliding-scale or the wooden triangular slide. Their accuracy depends upon the subject's head being exactly upright, and being kept in that position while the measurements are going on. There appear to be two recognised methods for placing the subject's head in an upright position. The first, devised by Dr. Barclay in 1803, consists in making the subject hold with his teeth a flat plate of metal mechanically levelled. Topinard discusses this plan, and condemns it as too complicated. For use in India and wherever notions of ceremonial purity prevail it is open to the serious objection that unless all the subjects operated on at the same time belong to the same caste and sub-caste the plate of metal would have to be continually washed in deference to caste prejudices. It also appears to me that if a man has got a plate of metal between his teeth the height from the top of his head to the bottom of his chin cannot be correctly measured, and will in practice vary considerably. The second method, which Topinard prefers, "consists in directing the subject "to look steadily at the horizon, and in correcting the position of his head if by "accident or through nervousness he does not look straight before him in the natural "manner." "In this manner," Topinard adds, "the head will be adjusted in accordance with the plane of vision, and will necessarily assume a correct position for the "purpose of measurement."

We must, I think, take it on Topinard's authority that the head can be correctly placed by following these instructions. We are met, however, by the further difficulty that after the correct position has been ascertained the subject cannot keep his head absolutely still, and that every movement, however slight, materially affects the measurements. Having got the correct position, we want to fix it, in order that there may be no movement while the measurements are going on, and in order that the position may, if necessary, be reproduced for the purpose of repeating and testing measurements already taken. For this purpose I had a small clamp, with a horizontal bar attached to it, made by the Mathematical Instrument Department, Calcutta. The clamp runs on the height-measure which is in the box, and is used in the following manner.



Adjust the subject's head correctly by the plane of vision as explained above. Then place the height-measure with its plummet attached on either side of the subject, and see by observing the plummet that the measure is upright. Run the clamp up until the horizontal bar attached to it touches the central cartilage of the subject's nose, and renders it impossible for him to depress his head. Then screw the clamp tight. The bar will rest exactly at the junction of the upper lip with the central cartilage—at the point, in fact, which forms the lower starting point for the

measurement of the height of the nose. So long as the subject rests his nose on this bar he will be in the correct position as previously ascertained; and if the height of the

bar on the gradations of the height measure is noted, the position can be reproduced at any moment. In fact, the sources of error are reduced to one—the possibility of the subject raising his head—and this can be easily guarded against by seeing that his nose is tightly pressed against the horizontal bar.

It will be seen that the horizontal bar in no way interferes with the process of measuring. It may even assist it, if the vertical arm of the T-square be steadied against the horizontal bar in taking the dimensions from vertex to tragus.

The annexed photograph shows the horizontal bar and clamp being used by my anthropometric assistant, Babu Kamud Behari Samanta, who is now engaged in measuring the typical castes and tribes of the Bombay Presidency and Sind. These measurements will complete a preliminary anthropometric survey of India, the results of which I propose to publish next year in the report on the census of India taken on the 1st of March 1901.

H. H. RISLEY.

Crete : Prehistoric.

Report.

Abstract of the Report of the Committee of the British Association on Explorations in Crete. Presented at Glasgow, September 13th, 1901. Communicated by the Secretary of the Fund. Cf. MAN, 1901. 2. 145

The Cretan Exploration Fund was formed in 1899 with the object of assisting British explorers and the British School at Athens to investigate the early remains of the island, which from indications already apparent seemed likely to supply the solution of many interesting questions regarding the beginnings of civilisation in Greece (cf. MAN, 1901. 2). To the furtherance of this work, begun in the spring of 1900, the grant of £145 was made last autumn by the British Association.

Already in 1894 Mr. Arthur Evans had secured a part-ownership (completed last year) in the site of Kephala at Knossos, which evidently contained the remains of a prehistoric building. Excavations, to which the fund has largely contributed, begun by him in 1900 on this site and continued during the present year, have brought to light an ancient palace of vast extent, which there is every reason to identify with the traditional House of Minos, and at the same time with the legendary "Labyrinth."

The result of the excavations of 1900 was to unearth a considerable part of the western side of this great building, including two large courts, the porticoes and entrance corridors, a vast system of magazines, some of them replete with huge store jars, and a richly adorned room, where between lower benches rose a curiously carved gypsum throne, on which King Minos himself may have sat in council. The second season's work has uncovered a further series of magazines, the whole northern end of the palace including a bath-chamber and an extensive eastern quarter. It was only towards the close of this year's excavations that what appear to have been the principal state rooms first came into view. A triple flight of stone stairs, one flight beneath another, here leads down from an upper corridor to a suite of halls, showing remains of colonnades and galleries. It was at this interesting point that, owing to the advanced season, Mr. Evans was obliged to bring this year's excavations to a close.

Apart from the architectural results already gained, the finds within the walls of the palace have been of such a nature as to throw an entirely new light on the art and culture of prehistoric Greece. . . . Among the minor arts represented is that of miniature painting on the back of crystal and intarsia work of ivory, rock-crystal, enamel, and precious metals, of which a splendid example has been found this season in the remains of a royal draught-board. Other finds illustrate the connections with ancient Egypt and the East. Part of a small diorite statue from last year's excavations bears a hieroglyphic inscription fixing its date about the beginning of the second millennium B.C., while a more recently-discovered alabaster lid bears the cartouche of the

Hyksos King, Khyan. A fine cylinder of lapis lazuli, mounted with gold and engraved with mythological subjects, bears witness to the early connections with Babylonia.

The most interesting of all the discoveries is the accumulated evidence that there existed on the soil of prehistoric Hellas a highly-developed system of writing some eight centuries earlier than the first written Greek monuments, and going back six or seven centuries, even before the first dated record of the Phœnician script. A whole series of deposits of clay tablets has come to light, many of the most important of them during last season's excavations, engraved with a linear script, often accompanied by a decimal system of numeration. Besides these linear tablets there was discovered a separate deposit of clay bars and labels containing inscriptions of a more hieroglyphic class. Although contemporary with the linear tablets, the script on these is apparently of quite distinct evolution, and in all probability in a different language.

Beneath the palace itself and the adjoining houses, and underlying the whole top of the hill, was also a very extensive Neolithic settlement (*cf.* MAN, 1901. 146). The relics found, such as the small human figures of clay and marble, supply the antecedent stages, hitherto wanting, to the Early Metal-age Culture of the Ægean Islands.

In addition to the assistance given to Mr. Evans in his work at Knossos, the Cretan Exploration Fund has contributed towards various works of exploration in the island undertaken under the auspices of the British School at Athens. In 1899 the late Director of the School, Mr. D. G. Hogarth, excavated a series of prehistoric houses in the lower town of Knossos. Mr. Hogarth further successfully explored the great cave of Zeus on Mount Dicta, discovering remains of a prehistoric sanctuary and large deposits of votive bronze figures and other objects, among which the double axe, the symbol of the Cretan and Carian Zeus, was specially conspicuous. During the present year Mr. R. C. Bosanquet, the new Director of the British School, has carried out an exploration of the site of Præsos, in the easternmost region of Crete, in historic times the chief civic centre of the original Eteocretan element of the island (*cf.* MAN, 1901. 148). This season Mr. Hogarth has also been enabled by a grant from the fund to explore an ancient site at Zakro in the extreme east of the island (*cf.* MAN, 1901. 147). He has there uncovered a small Mycenæan town with well-preserved remains of the lower part of the houses and magazines, and a pit containing fine examples of early pottery.

Other interesting sites, already previously secured for British excavation, remain to be explored. The Executive Committee of the Cretan Exploration Fund; however, are of opinion that, before devoting any sums towards breaking new ground, a sufficient amount shall be raised to enable Mr. Evans to complete his excavation of the palace of Knossos, a considerable part of the cost of which has already fallen on the explorer's shoulders. The large scale of the work, on which throughout the whole of last season 200 workmen were constantly employed, makes it necessarily costly, and in this case, in addition to many other incidental items of expenditure, a great deal has to be done towards the conservation, and in some cases even the roofing-in, of the chambers discovered. It is estimated that a sum of between one and two thousand pounds will be necessary for the adequate completion of this important work. The unique character of the results already obtained is, however, so widely recognised that the Committee confidently trust that no financial obstacles will stand in the way of this consummation.

J. L. M.

Crete.

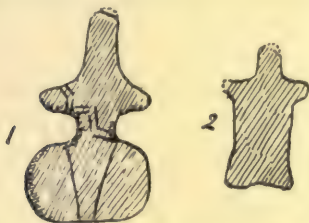
Evans.

The Neolithic Settlement at Knossos and its Place in the History of Early Ægean Culture. By Arthur J. Evans, M.A., LL.D., F.R.S.

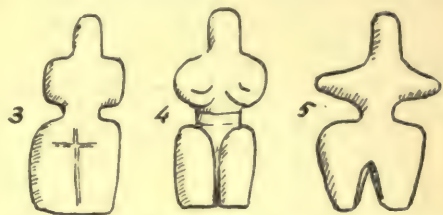
146

The hill of Kephala at Knossos, which contained the remains of the Palace of Minos and early houses going back to the pre-Mycenæan or Kamáres period of Crete, proves to have been the scene of a much earlier and very extensive Neolithic settlement.

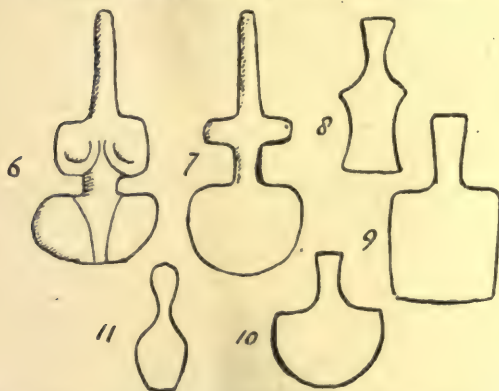
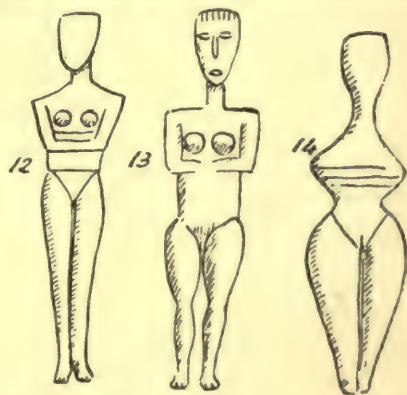
The exploration of this by the author, in addition to the work on the later remains of the "Minoan" Palace, has been greatly aided by the grant from the Association in 1900. The remains were contained in a stratum of light clay underlying the later prehistoric buildings, and which seems to have been formed by the disintegration of successive generations of wattle and daub huts and their clay platforms. This clay stratum, which had been a good deal re-used for later foundations, showed a mean thickness on the top of the hill of about five metres. In some places it was over seven metres thick, and went down to a depth of about ten metres below the surface. It contained an abundance of primitive, dark, hand-made pottery, often punctuated and incised, and with white chalky inlaying, more rarely chrome-coloured. The ornamentation was angular and of textile derivation. Stone implements abounded of greenstone, serpentine, diorite, hæmatite, jadeite, and other materials. Among these were over 300 celts or axes, besides chisels, adzes, hammers, and other implements. The most characteristic implements,



NEOLITHIC CLAY FIGURES KNOSSOS



NEOLITHIC MARBLE TYPES: KNOSSOS

EARLY METAL AGE, AMORGOS & FIDDLE
AND MALLET TYPES (MARBLE)EARLY METAL AGE; AMORGOS
DEVELOPED MARBLE TYPES

however, were the stone maces, the occurrence of which was especially important as bringing the Cretan Stone-age into near relation with that of Anatolia—and indeed of Western Asia in general—where, as in the early deposits of Babylonia, stone maces formed a marked feature. This characteristic was shared by pre-dynastic and proto-dynastic Egypt. Another interesting feature among the remains were the small human images of clay and marble which supplied the ancestors and prototypes of the stone images found in the early Metal-age deposits of Crete and the Cyclades. Their Anatolian analogies were pointed out, and reasons were adduced for their ultimate derivation, through intermediate types, from clay figures of a Babylonian Mother-Goddess, such as those lately found in the very ancient deposits at Nippur.

The Neolithic settlement of Knossos was the first settlement of that period yet explored in the Greek world, and in many ways threw an entirely new light on the beginning of civilisation in that area. The contents showed a marked contrast to the earliest Metal-age remains, such as those from the deposit of Hagios Onuphrios in

Crete, the date of which was approximately fixed by their association with Egyptian relics and the indigenous copies of them from 2800 to 2200 B.C. There were here no later vase forms of the high-necked and spouted class, no traces of painted pottery or metal, and no single example of the spiraliform decoration which in the early Metal-age deposits is found fully developed. This negative phenomenon strongly weighed in favour of the view that the Ægean spiral system was introduced during this later period with other decorative types from the Egypt of the Middle Kingdom, where it had already attained a high development.

The Neolithic stratum of Knossos itself actually underlay later buildings belonging to three distinct prehistoric classes :—

1. The "Kamáres," or Early Metal-age Period of Crete, illustrated by the contents of some of the earlier houses. The painted pottery in these was in some cases a mere translation into colour of the incised and punctuated Neolithic designs. This period is approximately dated from the relics found in the Hagios Onuphrios deposit and the Cretan vase fragments found in Egypt in a XIIth Dynasty association from c. 2800 to 2200 B.C.

2. The Transitional Period, between the "Kamáres" age and the Mycenæan. It is probable that the earliest elements of the Palace itself belong to this period, including an Egyptian monument ascribed to the close of the XIIth or to the early XIIIth Dynasty, c. 2000 B.C.

3. The Mycenæan Period proper, the flourishing epoch of which is approximately fixed by the correspondence of some of the wall paintings with those representing the Keftiu on Egyptian tombs, c. 1550 B.C.

Considering the distinct gap in development which still separates the latest elements of the culture represented by the Neolithic stratum of Knossos from the fully developed Kamáres style, it would be rash to bring down the lowest limits of the settlement later than about 3000 B.C. On the other hand, the great depth of the deposit must carry its higher limit back to a very much more remote date. The continued exploration of the Neolithic remains of Knossos is necessary for the full elucidation of many of the problems suggested by these discoveries.

A. J. EVANS.

Crete.

Hogarth.

Exploration at Zakro in Eastern Crete. By D. G. Hogarth, M.A. For the **147** Cretan Exploration Fund.

The excavation at Zakro in East Crete has been concluded so recently that I must confine myself to a plain statement of the raw material rendered available for study thereby. In estimating the final result it will be necessary to take account of positive and negative evidence not yet to hand from two other East Cretan sites, lately excavated, Præsos and Gorynia. Zakro lies in the south-eastern angle of the island, and was chosen for research because it falls in the Eteocretan country anciently reputed to be inhabited by aborigines, and because its safe bay must always have been a main port of call for craft sailing between the Ægean coasts and Africa. The small plain of Zakro, entirely hemmed in by rugged hills, is full of early remains, beginning in the later pre-Mycenæan period and ending with the close of the age of bronze. No implements of iron were found in it at all, and no Hellenic pottery. The town, therefore, owed its existence to a commerce which ceased or passed elsewhere from the Geometric age onward. The earliest settlement was on a rugged spur; and although almost all trace of its structures has disappeared, it has left abundant evidence of itself in the contents of a pit about 18 feet deep. This was found half-full of broken vases in stone and clay, largely of the singular "Kamáres" class not previously found in Eastern Crete. These, however, are mainly of a highly-developed technique, and their commonest schemes of ornament reappear unchanged on vases of distinctively Mycenæan fabric. In fact, Kamáres shapes and decoration are more closely related to Mycenæan at

Zakro than had been suspected. But the absence of both neolithic antecedents and the earlier kinds of painted ware from this site suggests that its civilisation did not develop on the spot, but was brought by colonists, perhaps partly Cretan, partly foreign. The fine quality of ware in this pit and the fact that, though of various periods, it was apparently all thrown in at one moment leads me to suspect that the pit contained the clearings of an early shrine.

At a later period the settlement extended over a low spur nearer the sea, and there very massive and large houses were erected and inhabited till the verge of the Geometric period. Their outer walls are Cyclopean, but their inner partitions are of bricks of unusual size. Complete plans were obtained of two of the largest houses; and parts of several others were explored, including the lower portion of what was probably the residence of the local chief or governor. These yielded a great deal of pottery, ranging from the acme of the Mycenaean period to its close, and the types furnish a better criterion of date than we have possessed hitherto in Crete. Numerous bronze implements were found, but these yield in interest to those from Gorynia. Two tablets in the linear "Cretan" script show that this system was known, though probably little used, and not indigenous, in East Crete. None were found couched in the pictographic system so often represented on East Cretan gems. Finally a hoard of 500 clay impressions of lost signet gems was brought to light. These display 150 different types and afford a priceless record of Mycenaean glyptic art and religious symbolism. Monstrous combinations of human and bestial forms occur in great variety, half a dozen, which are bull-headed, suggesting varieties of the Minotaur type. The comparison of all this mass of new material with the symbols of Egyptian, Mesopotamian, and other cults, which cannot fail to be fruitful, has yet to be made. Cist burials were discovered in caves farther inland, whose grave furniture seems to support certain negative evidence obtained in the Upper Zakro district and at Præsos, in showing that the aboriginal civilisation of East Crete was independent of both the Kamáres and Mycenaean civilisations. If these last were foreign to the Eteocretan country, it seems improbable that the Eteocretan language, as represented by the Præsos inscriptions, will prove to be that expressed by the linear script on the Knossian tablets; and the hope that these will be deciphered becomes fainter.

D. G. HOGARTH.

Crete: Excavations.

Bosanquet.

Report on Excavations at Præsos in Eastern Crete. By R. C. Bosanquet, **148**
Director of the British School of Archæology in Athens.

Præsos, the ancient capital of the aboriginal Eteocretans, lies high on the central plateau of eastern Crete.

The excavations which were conducted in the spring of 1901, with the aid of Mr. J. H. Marshall and Mr. R. D. Wells, architect, did not bear out the expectation that the Eteocretan capital would prove to have been a centre of Mycenaean culture. It is true that the Acropolis yielded a product of pure Mycenaean art under singular circumstances. A large lentoid gem, with the representation of a hunter and a bull, was found embedded in the mud-mortar of a late Greek house; it must have been plastered in unseen along with the earth from an adjacent rock-cut tomb which had evidently been emptied by the Hellenistic builders.

But no other vestige of Mycenaean occupation was found upon the site of the later city. The waterless ridge, encircled by deep ravines, offered nothing to primitive settlers. The earliest remains lie a mile away in a lateral valley near a spring. Here are several groups of megalithic walls, the chief of which was shown by excavation to be a sub-Mycenaean homestead. Its strictly rectangular plan, its massive thresholds, the spiral ornamentation of large jars in its cellars, show that, whatever fate had overtaken the cities on the coast, a certain standard of good workmanship had been

their legacy to the people of the hills. Nearer the city two tombs of the same period were discovered: the one, a square chamber with a *dromos*, yielded parts of two painted *larnakes*, thoroughly Mycenaean in design, a gold ring, a crystal sphere, parts of a silver vase, and a quantity of iron swords. The other was a well-built bee-hive tomb, differing from the usual type in being entered through a vestibule; it contained an enormous mass of geometric pottery, an openwork gold ring, a bronze fibula and other objects in gold, ivory and Egyptian porcelain. In the same neighbourhood a number of later tombs were opened, ranging from the Geometric period to the fourth century. Among the numerous geometric vases there are several new types, in particular a vessel in the form of a bird and a slender jug painted with delicate white patterns on a black ground. The later graves yielded jewellery in gold, silver, and crystal.

Prominent among the considerations which caused Præsos to be put upon the programme of the Cretan Fund was the fact that an inscription in an unknown tongue, presumably the Eteocretan, had come to light there and the hope that others might be found. It was dug up at the foot of the Altar Hill, a limestone crag precipitous on three sides which dominates the south end of the site, and had probably fallen from the level summit, long known to the peasants as a hunting-ground for "antikas." More fortunate than Professor Halbherr, who made a small excavation here with the same object before the Cretan Revolution, we obtained a second and longer inscription of 17 lines and apparently in the same non-Hellenic language, close to the entrance steps of a *temenos* on the hill top. It must have been a frequented place of sacrifice, for the rock was covered several feet deep with a deposit of ashes, burnt bones, and votive offerings of bronze and terra-cotta. The terra-cottas, ranging from the sixth to the fourth century, are important as giving a glimpse of a local school of artists working in clay (for Crete has no marble of her own, and Præsos at any rate imported none) and possessed of an independent and vigorous style. The great prize is the upper part of an archaic statue of a young god, half the size of life; the head and shoulders are intact, the remainder had disappeared. An equally well-preserved head, with fragmentary body, of a couchant lion is a further revelation of early Cretan sculpture. The bulky fragments of another lion, life-sized, later and feebler in style, prove the persistence of the local method. Among the bronzes there is a noteworthy series of votive models of armour, especially helmets, cuirasses, and shields. The pottery shows that the Altar Hill was frequented from the eighth century onwards.

By this time Præsos had probably become the religious and political centre of the district, a primacy for which it is admirably fitted by its position at a meeting place of valleys midway between the two seas. The Acropolis was fortified, the water of the distant spring brought to its foot in earthenware pipes, and a small temple built on its summit. The upper slopes of the Acropolis, though much denuded, yielded two archaic bronzes. Trial pits in the deeper terraces below revealed only Hellenic things, plainly built houses of limestone, roadways and cisterns, and a rubbish pit full of terra-cottas. A building larger and more massive than the rest was completely excavated; it contains eight rooms and has a front 75 feet long. Outside the town two minor sanctuaries were investigated; one adjoining the spring already mentioned contained large terra-cotta figures of a goddess of quite new type. A survey of the whole site was made by Mr. Wells, and a systematic exploration of the surrounding country by Mr. Marshall.

Although Præsos was barren of Mycenaean remains they are evident enough at Petras on the modern harbour of Sitia seven miles to the north. I made some trials here in June. Nine-tenths of the site had been ruthlessly terraced by its Moslem owner and would not repay a large excavation. The remaining tenth is occupied by cottages, and here under the roadway it was possible to uncover one side of a large building containing pithoi and "Kamáres" vases. On the hill-top there remain a few foundations of a large mansion, and outside the walls—for Petras is unique among early Cretan sites

in possessing remains of fortifications—was found a rubbish heap of the now familiar type, yielding whole cups and lamps and sherds of earthenware and steatite. Ten miles east of Petras, across the Itanos peninsula, is another early site, Paliokastro, which has been sadly mauled of late years by clandestine excavation. In the course of one of his exploring journeys Mr. Marshall made a remarkable discovery here. Heavy rains—the same that flooded Mr. Hogarth out of his quarters on the beach at Zakro—had exposed the corner of a very fine larnax; the native diggers had not noticed it, and he lost no time in securing it and some vases for the Candia Museum. One of its four picture panels represents a double axe planted upright upon a column, an important illustration of the axe and pillar cults discussed by Mr. Evans in the *Journal of Hellenic Studies*, XXI., 99 ff.

R. C. BOSANQUET.

REVIEWS.

Philippines.

Koetze.

Crania Ethnica Philippinica. Von G. A. Koetze; mit 25 Tafeln. Haarlem: 149
H. Kleinmann & Co. 1901.

This is the first part, with six plates, of a work to be completed in five parts on the anthropology of the Philippine Islands. It is based on the examination of about 270 skulls, 60 of which are Negritos, collected by Dr. A. Schadenberg and sent by him to the Museum of Leyden. Mr. Koetze, formerly prosecutor of anatomy in that University, has been entrusted with the examination and description of the crania. The author describes the craniological methods which he has followed, and, before stating the characters of the individual skulls, he writes a short chapter on the diversity of races inhabiting the Philippine Islands. From their position they have a considerable Malay population, and their proximity to China and Japan has led to the introduction of Mongolian people. The occupation of these islands for some centuries by the Spaniards has also been the means of introducing an European element. Prior, however, to the entrance of these races the islands were occupied by Negritos, who are apparently the aboriginal inhabitants. It would appear that two great Malay invasions took place. In the first they mixed with the Negritos and from this admixture proceeded the Igorrots, Ginaanese, and some smaller tribes, but the Negritos who lived in the mountainous districts did not cohabit so freely with the Malays as those living near the coast.

Many years later a second invasion occurred and the Igorrots with their companion tribes were driven more into the interior. The Tagals, Visayas, Ilocanos, who at the time of the conquest by Spain lived on the seaboard, represent the second invasion, and they also cohabited with the people who were in possession on their arrival, and the Negritos became confined to a limited area in the north of Luzon.

The Chinese and Japanese colonists also mixed with the races then present in the islands, and the Igorrots show in their faces Mongolian characters. Although the Spaniards exercised great influence over the earlier inhabitants, by the introduction of their religion and customs, it seems doubtful if they produced much effect on their physical characters. The Malay inhabitants are divided into three large groups, the Ilocanos in the north of Luzon, the Tagals in the middle, and the Visayas in the south on the Visaya islands and Mindanao.

In the first part of his work the author describes the Visayas and the Igorrots.

The Visayas (Bisayas) proper are the purest Malay people in the Philippines. They occupy Samar, Leyte, Negros, Bohol, Cebu, and to some extent the north coast of Mindanao. They have smooth, straight, long hair, and the skin is not very dark. The Calamians have a darker skin than the proper Visayas and the hair is curly, perhaps from a mixture of Negrito blood. Twenty-two skulls of these people are

described and their general characters were as follows: In the men the cranial capacity ranged from 1,315 to 1,720 cc., the mean being 1,475 cc.; in the women from 1,310 to 1,395 cc., the mean being 1,345. The cephalic index varied from 75·7 to 87·3; 57·1 per cent. were mesocephalic, 42·9 per cent. brachycephalic: the mean of the whole series was 80·4. The length-height index ranged from 71·9 to 83·8; with four exceptions the index was hypsicephalic. The breadth-height index with a mean 97 exceeded the cephalic. The face in general was leptoprosopic. The nasal index was as a rule platyrrhine, only two were leptorrhine. Koetze considers that the skulls are of two types, the one mesohypsicephalic with index 77·72, the other brachyhypsicephalic with index 83·84. Both a Malay and an Indonesian type are found, the latter the more abundant. He regards the Visayas as not a distinct race, for whilst the Malay and Indonesian elements preponderate there are traces both of Chinese and Negrito intermixtures.

Twelve Igorrot crania were examined, but the present part contains an account of only six, the remaining six and the general summary of characters being obviously deferred till part two appears. They occupy north Luzon. The skin is coloured a not very dark olive brown or yellowish copper colour and the muscular system is powerful.

W. TURNER.

Upper Burma.

Scott and Hardiman.

Gazetteer of Upper Burma and the Shan States. By J. G. Scott, assisted by J. P. Hardiman. In five volumes. Rangoon, 1900. 8vo. Vols. I., II., parts 1 and 2; Vol. III., part 2; pp. 727 + x, xi + 549; 560 + xi + viii, xvi + 802; xii + 437 + viii. **150**

Five bulky volumes represent our present official knowledge of Upper Burma. Binding, printing, quality of paper and of illustrations (all equally inferior) proclaim them to be of Calcutta official production—fitted to the financial conditions which at present rule the Indian treasury. Two of these volumes are devoted to the physical geography, history, ethnology, geology, &c., of the wild districts with which the gazetteer deals, and the other three comprise the familiar Indian gazetteer lists of place names (with short descriptive articles attached) and the very necessary index thereto. Probably no writer on Burma and the Burmese who has ever illustrated the story of the eastern frontiers with a lively and entertaining pen could have been found more capable of dealing with such a subject than Mr. J. G. Scott; but there are indications that the dead weight of statistical details with which he was confronted have proved a little too much for him. He is certainly less entertaining than usual. It is unfortunate for those writers who in future will have to place before the public any such comprehensive review of the physiography of the East and the conditions of life therein prevailing, that such a literary giant in the field of gazetteering as Sir W. W. Hunter should have preceded them. If Hunter had never written about India no one would have looked in the pages of a gazetteer for entertainment.

In the geographical section of the work the most interesting feature is Scott's examination into the evidence already existing as to the sources of the Irrawadi. He unhesitatingly assigns to the N'mai river (which is the easternmost of the two great branches of the Upper Irrawadi) that geographical precedence which entitles it to be considered as the true source, on account of its superior volume, although it has not yet been traced throughout its course and is unsuited to navigation. The very fact that there should still exist the shadow of a doubt on such a point is sufficient indication of the nebulous condition of present geographical information about the hinterland of Upper Burma; and the same haze of uncertainty may be said to rest on every subject which is related to the physical attributes of the country and its people. Many points of interest still remain to be determined as regards the ethnographical affinities of the

great mass of Indo-Chinese, or Tibeto-Burman, tribes, who have apparently occupied from time immemorial the wild hills and valleys which they now hold. They present few, if any, of those problems of race movement (the geographical shiftings of nations) which distinguish all such enquiries on the north-west frontier of India. The wide extension of the Shan tribes is pointed out, and their general adaptability to European influences seems to open up possibilities of a consolidated and well-regulated "buffer" on the eastern Burmese frontier between ourselves and France. The history of Burma practically commences in 1852 with the Mindon Min. The earlier records are (as Scott puts it) "parochial and uninteresting," full of names and fables. The interest of it commences with our annexation, and then, of course, it is as modern as the contributions of any special correspondent.

Of the general value of the gazetteer as a work of reference it is unnecessary to say anything. It is an integral and necessary part of the administrative machinery of the Government of India, and that Government is fortunate in finding officers to compile it who combine such wide experience and such literary skill as Messrs. Scott and Hardiman.

T. H. HOLDICH.

Great Britain : Ethnology.

Macnamara.

Origin and Character of the British People. By N. C. Macnamara. 8vo. 151
London : Smith, Elder, 1900.

This little book aims at explaining the underlying causes of differences in character between the inhabitants of the South and West of Ireland, of Wales, and of England and Scotland. It is clearly written, well printed, and has an index. Beginning, as it does, with palæolithic man, and ending with the effects of city life on the modern Londoner, it can only pretend to be a sketch of so vast a subject, but within the limits the author has laid down for himself, it is well done. The author, from his profession as a surgeon, naturally relies greatly on the physical characters as the basis of his theories. It is, therefore, the more surprising that he should support Professor Boyd Dawkins in his belief that the Eskimos are the actual descendants of glacial man in Europe. The physical characters of a people are no doubt slow to change, and in this respect are more to be relied on than language, but where other material exists it is rash to dogmatize from the physical side alone. A true judgment can only be obtained by taking into consideration all the complex conditions which go to differentiate one race from another. This is, however, only a small matter in Mr. Macnamara's book, which will be read by all who feel an interest in the origin of the people of these islands. C. H. R.

PROCEEDINGS OF SOCIETIES.

Proceedings.

Anthropological Institute.

Huxley Memorial Lecture, October 29, 1901.—The Huxley Memorial 152
Lecture was delivered in the hall of the Society of Arts, the Right Hon. Lord Avebury, F.R.S., ex-President of the Institute, in the chair.

The lecture was delivered by Mr. Francis Galton, D.C.L., D.Sc., F.R.S., on the possibility of improving the human race under the present conditions of law and sentiment. The lecture is published in abstract in MAN, 1901. 132, and in full in *Nature*, November 1, 1901.

The Huxley Memorial Medal was presented by Lord Avebury to the lecturer.

On the motion of Mr. E. W. Brabrook, C.B., seconded by Professor G. B. Howes, F.R.S., the thanks of the meeting were given to Mr. Galton for his lecture.

A vote of thanks to Lord Avebury for presiding at the lecture was also passed.

Ordinary Meeting, November 12, 1901.—Mr. W. Gowland, F.S.A., Vice-President, in the chair.

The election was announced of Messrs. G. J. Henderson, F. T. Elworthy, J. O. Brant-Sero, M. Lendon-Bennett, and H. R. Tate as Fellows of the Institute.

Mr. Shelford exhibited and described a series of lantern slides made by Dr. Garson from photographs of the natives of Sarawak taken for Her Highness the Raneë of Sarawak.

A collection of gold jewellery, found in Borneo but apparently of Hindu origin, was exhibited on behalf of His Highness the Rajah of Sarawak and described by Mr. Shelford; the jewellery was discussed by Messrs. Balfour, Dalton, and Gowland.

Mr. Shelford read his paper on *A Provisional Classification of the Swords of the Sarawak Tribes*. The paper was discussed by Messrs. Balfour and Gowland.

Mr. J. Gray exhibited a craniometer for measuring the auricular height of the head. It was discussed by Messrs. Garson and Shrubsall.

Proceedings.

Soc. d'Anthr. de Paris.

Sommaire des Procès-verbal de la Séance du 3 octobre 1901.

153

Le Président rend compte de la mission que la société lui avait confiée de la représenter aux fêtes du Prof. Virchow.

M. Sanson présente sa photographie pour les collections de la société; il serait à désirer que tous nos collègues en fassent autant.

M. Zaborowski : Photographies de types du Congo.

M. Cauderlier : Les causes de la dépopulation de la France. Discussion : MM. Macquart, Robin, Hervé.

Séance du 17 octobre 1901.

Le Président annonce la mort de MM. Ascoli, Pommerol, et Serrurier, membres titulaires, et M. Chil y Naranjo, membre associé étranger. Au nom de la Société, il s'associe à la douleur des familles de ces très regrettés collègues.

M. A. de Mortillet présente des objets des Dolmens d'Aveyron; M. Paul de Mortillet, la Liste des publications de Gabriel de Mortillet; M. Zaborowski, des photographies du Caucase.

M. Lejeune : Rapport de la Commission des Conférences.

M. Macquart : Diminution de la Natalité. Discussion: MM. Papillault, Worms, Atgier, Zaborowski, Robin, Letourneau, Rahou, Regnault, Sanson, Lejeune, Ad de Mortillet, Taté, Chervin.

M. Lejeune : La représentation sexuelle en religion, en art et en pédagogie. Discussion : MM. Chervin, A. de Mortillet, Zaborowski.

Séance du 7 novembre 1901.

M. Hervé présente des photographies des fouilles de Chamblandes (Lac Léman), crâne macrocéphale helvète-burgonde trouvé par M. Schenk.

M. Verneau : Reproduction d'un manuscrit mexicain précolombien publié par M. le duc de Loubat.

M. Volkov : Influence de l'âge sur les caractères anthropologiques, par M. Pfitzner.

M. Regnault : Anomalies osseuses pathologiques.

M. Georges Raynaud : Déchiffrement des écritures de l'Amérique centrale.

M. Marcel Baudouin : Photographies stéréoscopiques des mégalithes. Discussion : M. Nicole.

M. Thieullen : Silex-bijou du Diluvium. Discussion : MM. Letourneau, Vauvillé, Taté, Giraux.

M. Laville : Sur le caractère de certaines populations canaïques. Disque et lame en forme de grattoir magdalénien.

INDEX.

NOTE.—The numbers in ordinary type refer to the papers; the numbers in Clarendon type are the reference numbers of *MAN*, 1901. For collected references, see especially *Africa, America, Archaeology, Art, Asia, Europe, Folklore, Oceania, Physical Anthropology, Religion, Sociology, Technology.*

A.

Abydos (Egypt), 248.

Ægean Script in Kos, 52.

AFRICA:—Algeria, Libyan Notes (*rev.*), 62; On the Libyan Notes, 69; Ashanti (*rev.*), 101; Bishari, 74; Congo, Ethnography, 116; Lake Nyassa, 111; Libya, 252; Morocco, Shluh Language (*rev.*), 45; Nile Welle watershed, 256; Tunis, 109. Uganda, Notes on Baganda (Roscoe), 117ff; Problems of Early Religion, 21; Rhodesia, 82, 83; Totemism, 117ff. Africa East, 112; Stool, gong, etc., 39. Africa, North, 83. Africa, South: Bushman Skull, 58; Dhlo-Dhlo, Ruins of, 21ff; Mambo, Ruins of, 21ff; Natal, Native pipes, 10; Natives of South Africa (*rev.*), 111. Africa, West. Carved Doorposts, 57; (*rev.*) 100. Egypt, 61, 109, 127, 141; Copper Ore, 268; Early Egypt, 248; Physical type, 127; Grabfunde des Mittleren Reichs (*rev.*), 91; El Amrah, 230, 235; El Amrah Cemetery, 40; El Khargeh, 91; Egypt, Upper, 229 *sqq.*

Akka Skulls, 259.

Alphabet, Philippines, 217.

Alveolar Index, Egypt, 251.

AMERICA (NORTH)—California, Basket-work, 17; Ethnography, 133; Folklore (*rev.*), 118; Iroquois, 131; "North Americans of Yesterday" (*rev.*), 97; Ontario, Archæological Report (*rev.*), 33; Red Indian Agricultural Customs, 155; Totemism, 134. AMERICA (SOUTH):—Lengua Indians, 281 *sqq.*; Divergence of Sexes in Language, Chiquitos, 129.

Amorites, 250.

Ancestor Worship, Manipur, 304.

Andrée, R., "Braunschweiger Volkskunde" (*rev.*), 115.

Animals, Lengua Indians, 288; Cult of, Sarawak: Crocodile, 196; Deer, 200; Gibbon, 200; Hawk, 175-9, 194, 206; Porcupine, 200; Python, 200; River Turtle, 201; Swift, 218.

Animals, forms of, assumed by Deities, 198; in tatuing, 202; training of, 295.

Annual Meeting of the Institute, 1.

Anthropology, Teaching of, 15.

Anthropometry, 144; India, 113.

Anthropomorphism, 174, 197.

Apologies, to pig before slaughter, 180.

ARCHÆOLOGY:—Africa: Cemetery, El Amrah, 40; Khami Ruins, 82; Monuments of Persian Dynasty, Egypt, 91; Ruins of Dhlo-Dhlo

- 21 *sqq.*; Tel el Amarna Period (*rev.*), **141**. *America*: Lengua Indians, 294; Middens, Canada, **133**. *Asia*: Tombs, Chinese, **54**. *Europe*: Bronze Age, **85**; Cretan Exploration Fund, Report, **2**; Crete, **145**, **146**; Excavations, Crete, **148**; Greece, **138**; Greece (*rev.*), **136**; Megalithic Tombs, **88**; Mycenaean Cyprus, **130**, **138**, **139**; Prehistoric Pottery, Maltese, **71**; Pre-Mycenaean Athens, **70**; Stone Figures, Crete, **148**; Stone Age, Crete, **146**; Stonehenge, **18**. *Oceania*: Stone Figures, Easter Island, **7**.
- Arctogale Leucotis as omen, 196.
- Arithmetic, Lengua Indians, 296.
- Arrow, Lengua Indians, 294.
- Arrowheads, Stone, Khami Ruins, **82**.
- ART:—*Africa*: Carved Doorposts, **57**; Egyptian Statuette, **107**; North Africa, **83**; Ornaments, Architectural, Ashanti, **101**; Ornamentation, Khami Ruins, **82**; Ornamentation, Dhlo-Dhlo, 24 *sqq.*; Painting, El Khargeh, **91**; Patterns, **82**; Sculpture, Kumasi, **101**; Tatuing, Ashanti, **101**. *America*: Drawing, Lengua Indians, 294; Ornaments, Lengua Indians, 287; Patterns, Lengua Indians, 284; Savage Music (*rev.*), **118**; Tatuing, Lengua Indians, 282. *Asia*: Ornaments, Animal Derivatives, 191; Patterns, Tatuing, **29**; Patterns, Women's, Sarawak, 224; Patterns, Malay House, **142**; Wheel of Life, **1**. *Europe*: Guilloche Pattern, **4**; Ornaments, Crete, **146**; Pottery, Crete, **82**, **146**, **147**; Sculpture, Crete, **148**. *Oceania*: Maori Motives, **57**; Maori Scroll Pattern, **55**; New Guinea, 64; Solomon Isles, **81**; Tatuing, Maori, **98**; Tatu Patterns, **31**; Tatuing Patterns (*ill.*), 50, 54, etc.
- Aryan Race (*rev.*), **88**.
- Ashanti, **101**.
- ASIA:—Ainu Inao, 131; Asia Minor, Religion, **122**; Assam. Dafia Language (*rev.*), **46**; Burma, **77**; Upper, **150**; Chinese Tombs, Relics from, **15**, **54**; India. Among the Himalayas (*rev.*), **49**; Ethnographical Survey, 11, **113**; Madras, Dômba of Jeypur, **29**. Japan. Wheel of Life, **1**; Japanese Gohei and Ainu Inao, 131. Malay Peninsula, **192**; Metalwork, 161; Manipur, 300 *sqq.*; Papuan Skulls, 261; Philippines, **149**; Language, 214 *sqq.*; Sarawak, Swords of, 219 *sqq.*; Siam, **99**; Celadon Ware, **41**; Yakuts, 65ff.
- Aston, W. G. Gohei and Inao, 131.
- Auspicia (*footnotes*), 175, 176, 179, 193.
- Australia, **143**; Strangling Cords, **94**.
- Authority, Chief, 174; Dependent on Sacerdotal Functions, 309; Ghennabura, Manipur, 307; King, Manipur, 300.
- Axe. Lake Nyassa, 112; Stone, Lengua Indians, 294.
- B.
- Balfour, H., M.A., 228, 278, 315; Bambu Trumpets, **28**; Guilloche Pattern, **4**; Memorial Heads, **51**; Native smoking Pipes from Natal, **10**; On a Spear Head and Socketed Celt of Bronze from the Shan States, **77**; Strangling Cords from the Murray River, **94**; Swan-neck Boomerang, **27**.
- Balli, Use of the word, to denote spiritual aspect, 175.
- Bantu Tribes, Totemism among, **111**.
- Baram District, 173.
- Basket Work, Lengua Indians, 284.
- Bastian, Dr. A., **135**.
- Beard, Early Egyptian, 250 *sqq.*; Depilation, 34.
- Beddoe, Dr. J. Bushman Skull, **58**; Crania Suecica, Review of, **59**.
- Bell, A. M., 314.
- Bent, T. "Southern Arabia" (*rev.*), **23**.
- Bevan, Prof. A., 231.
- Bibliography, International, **108**; India, **35**.
- Bicol Language, 215.
- Blackmore Museum, 313.

Blandford Museum, Skull of New Zealander, 172.
 Blood-Brotherhood, 185, 190, 209; to Animals, 210.
 Blue (colour-sense) in Egypt, comparison with Murray Islanders, 239.
 Boas, Dr. F., 133.
 Booth, C., 132.
 Bosse, K. K., and W. A. Holden. "The Order and Development of Colour Perception and Colour Preference in a Child" (*rev.*), 87.
 Borneo. Kalamantans, 192 *sqq.*; Kayans, 188 *sqq.*; Kenyahs, 174 *sqq.*; Nyarong, 173 *sqq.*; Punans, 195-6, 204; Relations between Men and Animals in Sarawak, 173; Sarawak, Swords, 219-228; Sea Dyaks, 173, 196.
 Bosanquet, R. C., Excavations at Praesos, 145, 148.
 Bow and Pellet-bow, Lengua Indians, 294.
 Brain, 126.
 Brant-Sero (Ra-onha) J. O., "Dekanawideh; the Law-Giver of the Canien-gahakas," 134.
 Bronze Age, Schleswig-Holstein (*rev.*), 85.
 Bronze Celts, Ireland, 265.
 Brigham, W., Index to Islands of Pacific (*rev.*), 103.
 Brighton Museum, 310, 311.
 Brooke, Mr., of Marlborough, 310.
 Brunswick, Folklore (*rev.*), 115.
 Buddhism in Siam, 99.
 Burials, Manipur, 295, 305.
 Burial of living infants, 306.
 Burkitt, F. C., 231.
 Burma, 77; Upper (*rev.*), 180.

C.

Cagayan or Ibaneg Language, 216.
 Cannibalism, Lengua Indians, 288.
 Cambridge Anthropological Expedition to Torres Strait, 87; to British New Guinea, 121.
 Campbell, Rev. J., 133.
 Campbell, J. G., "Superstitions of the

Highlands and Islands of Scotland" (*rev.*), 104.
 Campbell, Index Catalogue of Indian official publications in the British Museum (*rev.*), 35.
 Canada, Ethnography, 133.
 Capart, J. On "Libyan Notes," 69, cf. 62.
 Carved Slates, Egypt, 249, 252.
 Cats' Cradles, Lengua Indians, 285.
 Cattle, Sarawak, 193, 197; as Omens, 199.
 Celamiano Language, 216.
 Celt, Burma, socketed, 77; Tonga, 110; Bronze, 265; Copper, Distribution of, in Ireland, 265; Copper, finds of, 276; Gen. Pitt-Rivers on, 279; Analysis of, 266; Stone, Types of, 273.
 Cephalic Index, Egypt, 251; Libya, 251; Mid-Italy, 251; England, 252.
 Cephalographs, 113.
 Cephalometric Instruments, 111.
 Cera Perduta process, 165.
 Ceremonies, Malay, 142; to secure rainfall, 302.
 Chaco, the Lengua Indians of the, Paraguayan, by Seymour H. C. Hawtrey, 281.
 Chains, making of, by casting, 165.
 Chalmers, Rev. J., 121.
 Chantre, E., "Les Bicharieh" (*rev.*), 74.
 Chants, Lengua Indians, 293.
 Charms, Tusks of Wild Boar as, 200.
 Chief, Authority of, 174.
 Chiefs and tatuing, 49.
 Chin Hills and Shan States Reports, 1899 (*rev.*), 13.
 Chronology, Cretan, 146.
 Circumcision, 140.
 Clans, tendency to maintain Physical Characteristics, Scotland, 128.
 Cloth-making, Malay Peninsula, 142.
 Clothing, Sarawak, 174.
 Club, New Britain, 167.
 Coffey, G., Irish Copper Celts, 265ff.
 Collections, Ethnographical, 16.
 Colour Blindness, 87, 236; Nomenclature, Upper Egypt, 230; Sense, Animals, 87; Thresholds, 239; Vision (*rev.*), 87.

Colour Vision, of the Natives of Upper Egypt, by W. H. R. Rivers, M.D., 229.
 Conservatism, Lengua Indians, 286.
 Congo, Ethnography (*rev.*), 116.
 Contact with Civilized Races, Lengua Indians, 298.
 Conventionalized Derivatives, 187.
 Copper and White Metal, 165; Bohemia, 271; Saxony, 271; Celts, Irish, 265; analysis of, 266; tin, admixture of, with copper, Egypt, 268; Ores, European, 268; Spanish, Parazuelos, analysis, 269.
 Cornwall, Tin in Copper, 270, 271.
 Coronation Ceremony, Manipur, 301.
 Council, Report of, 2.
 Crania, cf. Skull.
 Crania from the Nile-Welle watershed, Notes on, by F. C. Shrubbsall, M.A., M.B., 256.
 Craniometry, 251-2, 256-260, 261-264.
 Cretan Exploration Fund, 2, 146.
 Crete, 147; Excavations, 148; Mycenaean, 148; Prehistoric, 145, 146; Prehistoric relations with Egypt, 138.
 Crocodile, 186, 190, 196; Carving of, as a charm, 196; connection of, with rice culture, 198; Sacrifice before, Image of, 198.
 Crossbeams, 191.
 Crowfoot, J. W., "A Yezidi Rite," 122.
 Crump, Rev. J. A., "Trephining in the South Seas," 167.
 Cumont, F., "Acts of St. Dasius," 53.
 Cup Markings on Stones, 97.
 Cutting Tools, Egypt, 123.
 Cyprus, Mycenaean, 130, 138.

D.

Dagger and Beer Ladle, Lake Nyassa, 112.
 Dalton, O. M., Carved Doorposts, West Africa, 57; California Basket-work, 17.
 Damascening, Malay, 163.
 Dances, 180, 297.

Davies, Dr. C. Consanguinity (*rev.*), 8.
 Dawkins, Prof. Boyd, 310.
 Dawson, Dr. G. M., 133.
 Day, R., 276.
 Dayaks, Sea, 173; or Ibans, 196.
 Death, hastening of, 295; Mutilations at, 295; Origin of, myth, 151.
 Deer, 187, 193, 197; as Omens, 187, 199.
 Deities, distinct for men and for women, Sarawak, 175.
 Dellenbaugh, F. S., "The North Americans of Yesterday" (*rev.*), 97.
 Depilation, 29.
 Diseases, Niue, 140.
 Dixon, J. B., 310.
 Dog, 174, 187, 193, 195, 306; Buried with dead, Manipur, 306.
 Domestic Animals, Cattle, 187, 193, 197; Dog, 174 *sqq.*; Fowl, 174, 182-6, 195, 209, 307; Goat, 301; Pig, 174, 180-2, 195, 307, 308; Sacrifice of, 205.
 Dok (Macacus Nemestrinus), 191; Dance, 191.
 D'Orbigny, 129.
 Drawing, Lengua Indians, 286.
 Dreams, 290, 301, 307.
 Dress, Early Egypt, 253, 254; Sarawak, 174.
 Du Bois, "The Philadelphia Negro" (*rev.*), 14.
 Dyeing, Lengua Indians, 286.
 Dynastic Race, Early Egypt, 252.

E.

Edge-Partington, J., An Object of Unknown Use and Locality, 80, 92 (*rev.*), 117 (*rev.*), 143; Easter Island Tablets, 7; Feathered Arrows, 32; Forged Ethnographical Specimens, 56; Matuatonga, Note on, 30; Ornaments from the Solomon Islands, 89.
 Edridge-Green, Dr., 246.
 Eggs, 307; As Offerings, 185.
 Egypt, 107 (*rev.*), 141; Admixtures of Tin and Copper, 268; Egypt and Ancient Libya, connection between, 252; Bones of Hen Neklit, 127;

Cutting Tools, **123**; El Khargeh, **91**;
The Early Races of, by W. M. Flinders
Petrie, D.C.L., 248.
Egyptians, Colour Sense, **87**, 229 ff.;
Physical Type of Early, **127**.
Egyptian Research Account, **127**.
El Amrah, 230, 235.
English Cephalic Index, 252.
Eoliths, 313.
Eponymus as Scapegoat, 302.
Eponymous Ancestor Worship, 303;
Tribal Deities, 303.
Ethnographical Survey of India, 11,
113.
Ethnography, Congo (*rev.*), **116**.
Etiquette, Lengua Indians, 291.
Evans, A. J., **138**, **145**; "The Neolithic
Settlement at Knossos," **146**; Cretan
Exploration, **2**.
Evans, Sir John, **77**, 310.
Exogamy, Manipur, 303; Sarawak, 204.
Extispicia, 181, 185, 198, 199.

F.

Farnell, L. R. (*rev.*), **87**.
Fawcett, F., "Dômb's of Jeypur," **29**.
Feathers as offerings, 185.
Felkin, Dr. R. W., "A collection of
objects from Lake Nyassa," **112**.
Fellahin, 230.
Festivals, reaping, Manipur, 307; sowing,
Manipur, 307.
Fetish, 210.
Fiji, "vasu," institution, **136**.
Finds, of Copper Celts, 276.
Fire, by Friction, Lengua Indian, 206,
208.
Firnis-Malerei, **78**.
Fishing, Lengua Indians, 287, 289.
Fleam, Bow and Arrow, New Guinea,
121.
Fletcher, Alice C., "Indian Story and
Song" (*rev.*), **118**.
Flints, Glazed, 313, 314; Distinction
in Age of, 310; Palæolithic, 310;
Polished by Sand Blast, 313, 315;
Chemical Explanation of, 315.

FOLKLORE:—

America:—Dreams, Lengua Indians,
290; Iroquois, 134; Magic, Lengua
Indians, 290; North America, **118**;
Witchcraft, Lengua Indians, 290;
Witch doctor, 288.
Asia:—Annexation of Unnamed Child
by Spirit, 304; Blood Brotherhood,
185, 190, 209; to Animals, 210;
Ceremonies to Secure Rainfall, 302;
Connection of Crocodile with Rice
Culture, 198; Crocodile, Carving of
as Charm, 196; Divination with
Twigs, Manipur, 308; Eponymus
as Scapegoat, 302; Forms of
Animals assumed by Deities, 198;
Land Tortoise and Mouse-Deer in
fable, 199; Magic, Manipur, 301;
Omens, 162 *sqq.*, 302; Snake God,
302; Snake King, 301; Snake
Personification, 304; Soothsaying,
304; Soul-Catching, 185; Tusks
of Wild Boar as Charms, 200;
Use of Fire to procure Rain, 308;
Vampires, 304.
Europe:—Animal Superstitions, **5**;
Brunswick, **115**; France (*rev.*), **140**;
Norway, **79**; Scotland (*rev.*), **104**;
Singing Games (*rev.*), **48**; Vergô-
dendêl, **115**; Wells, Irish, **11**, **19**.
Oceania:—Stories from S. New
Hebrides, 147.
Food, Lengua Indians, 287.
Forgeries, Fijian, **56**; New Zealand, 92;
Pacific, **93**.
Fowl, 177, 195, 182–186; Blood of,
Sprinkled on Altar, 209, 307.
Foy, W., Tanz-objekte (*rev.*), **47**.
Fraternities or Orders resembling
Thiasoi, Asia Minor, **122**.
Fraser River, Lower, Early Inhabitants
of, **133**.
Frazer, Dr. J. G., 177, 211, **111**; Golden
Bough (*rev.*), **43**; Men's language
and Women's language, **129**.
Freeman, R. Austin, "Travels and Life
in Ashanti and Jaman" (*rev.*), **101**.
Funeral Ceremonies, 305.
Futterer, "Durch Asien" (*rev.*), **34**.
Future World, Belief in, Manipur, 307.

G.

- Galton, F. "The possible improvement of the Human Breed under existing conditions of Law and Sentiment," **132**.
- Games, Lengua Indians, 297.
- Garstang, J., **127**, 315.
- Geiger's views on Colour-vision, **87**.
- Geographical Congress, Seventh International, at Berlin, **119**.
- Gérin, Leon, **133**.
- Gerrit Demp Island, 168.
- Ghosts, Belief in, 100.
- Gibbon as Omen, 188.
- Giraux, M. The proposed Monument to G. de Mortillet, **114**.
- Girod, P., "L'age du Renne" (*rev.*), **37**.
- Gladstone, Dr. J. H., 279.
- Gladstone, W. E., Views on Colour-vision, **87**.
- Glaze (pottery), **78**; Flint, 313.
- Goat, Manipur, 301.
- Goldsmith's Tools, Malay, 165.
- Gomme, G. L., 308.
- Gomme, Mrs., "Singing Games" (*rev.*), **48**.
- Good Luck, *see* Omens.
- Government, Lengua Indians, 291.
- Gowland, W., 266.
- Grand Chaco, the, Physical Characters of, 281, 282.
- Gray, J. Cephalometric Instruments (*ill.*), 111; Measurement of Papuan Skulls, 261, **128**.
- Great Britain, Ethnology (*rev.*), **151**.
- Greece, Prehistoric (*rev.*), **130**, **138**, **139**; Religion (*rev.*), **86**.
- Grey, Sir G., 210.

H.

- Habitations, Early Egypt, 253; Lengua Indians, 283; Sarawak, 174.
- Haddon, A. C., **95**, **124**; A Papuan bow-and-arrow Fleam, **121**, **124**; Notes on two letters published in the *Times*, 1901, The origin of the Maori Scroll Pattern, **55**.

- Hair. Early Egyptians, 252, 253, 254; Lengua Indians, 282.
- Hall, H. R., "The Oldest Civilization of Greece" (*rev.*), **130**, **139**.
- Handle, Parang, 220.
- Hardy, 94.
- Hartland, E. S., "On certain Wells in Ireland," **19**; **118**, cf. (*rev.*), **135**; "On Some Problems of Early Religion in the Light of South African Folklore," **21**.
- Hawk, Cult of, 175, 194, 206.
- Hawtreys, Seymour H. C., "The Lengua Indians of the Parguan Chaco," 280.
- Headache, Cure of, 168.
- Head-dress, Manipur, 202.
- Head-hunting, 203.
- Hen Nekht, bones of, 127.
- Heraldry, Tatoo and, 47.
- Herbert, Hon. Auberon, **124**.
- Herzog, R., "Ægean Script in Kos," **52**.
- Hieroglyphic, Oldest Known Egyptian, **40**.
- Hill-Tout, Chas., "The Ethnographic Survey of Canada," **133**.
- Hinde, Mrs., "The Masai Language" (*rev.*), **73**.
- History, Lengua Indians, 294.
- Hochstetter, views on the Cerebral Hemispheres, **126**.
- Hodson, T. C., The Native Tribes of Manipur, 300.
- Hogarth, D. G., **145**, **147**; "Explorations at Zakro in Eastern Crete," **148**.
- Holden, W. A., and K. K. Bosse, "The Order of Development of Colour Perception and of Colour Preference in the Child" (*rev.*), **87**.
- Holdich, Sir T. H., **150**.
- Holmgren's Method of Testing Colour Vision, 229 *sqq.*
- Horse, among Yakuts, 71.
- Horsley, Dr. V., 169.
- Hose, C., and W. McDougall, "Relations Between Men and Animals in Sarawak," 173.
- Houses, Demolition of, Lengua Indians, 284.

Hunting, Lengua Indians, 294.
Huxley Lecture, 3, 132.

I.

Igorotte Language, 216.
Ilocano Language, 216.
Implementiferous Beds, Classes of, 314.
Index Catalogue of Indian Official Publications in the Library of the British Museum (*rev.*), 35.
India, Bibliography of Official Papers, 35; Ethnographic Survey, 113; Among the Himalayas (*rev.*), 49; Madras, The Dômbes of Jeypur, 29.
Infanticide, 295, 301.
Intermixture with Dwarf Races, Affecting Size of Skull, 259.
International Catalogue of Scientific Literature, 5, 11.
Irish Copper Celts, by George Coffey, 265.
Iron, 161.
Irrigation, 309.
Italy, Mid., Cephalic Index, 251.

J.

Jaggery, or Coconut Sugar, Making of, 142.
Jardin, O. S., 266.
Jevons, F. B., 177, 203.
Joloano language, 216.

K.

Kabyle, 250.
Kajaman sword, 221.
Kalamantans, 192-195, 204, 207.
Kayans, 188-192, 203, 207, 208, 210, 212.
Keith, Dr. A., Palmistry, 20.
Kenya's, 174-188, 203 *sqq.*
Khami Ruins, 82.
King, Position of, Manipur, 300.
Kingsley, Miss Mary H., "West African Studies" (*rev.*), 100.
Knife, Egypt, 123.
Knossos, 145, 146.
Knowle Farm, flints from, 310.

Koetze, G. A. "Crania Ethnica Philippinica" (*rev.*), 149.
Konow, Dr. Sten, 79.
Kris, Malay, 161; manufacture of, 161.

L.

Lang, Andrew, 135; "Making of Religion" (*rev.*), 3; "Martyrdom of St. Dasius," 68.
Language, Divergence of the Sexes, South America (*rev.*), 129; Lengua Indians, 293; Manipur, 300.
Languages, Malay family of, 214.
Languages of the Philippines, Memorandum on the, by W. E. W. MacKinlay, 214.
Layard, Miss Nina, "Notes on a Human Skull found in the bed of the River Orwell," 125.
Leather, Lengua Indians, 285.
Lefthandedness (*rev.*), 84.
Legitimacy, Test of, 119.
Lengua Indians of the Paraguayan Chaco, The. By Seymour H. C. Hawtrey, 280; Physical type, 281; Meaning of Name, 281.
Leptis Magna (Lebda or Khoms), 83.
Lewis, A. L. Stonehenge, 18.
Libyans, 250.
Libyan title "Battos," 252.
Linguistics, Bicol Language, 215; Cagayan Language, 216; Celamiano Language, 216; Daffa Language, 46; Divergence in Language between Sexes S. America (*rev.*), 129; History of Language (*rev.*), 50; Ilocano Language, 216; Language of Philippines, 214; Lengua Indians, 293; Joloano Language, 216; Malay Family of Languages, 214; Manipur, 300; Masai Language (*rev.*), 73; Pampango Language, 216; Pangasinan Language, 216; S. America (*rev.*), 129; Schlüh Language (*rev.*), 45; Tagalo Language, 214, 215; Visaya Language, 215.
Lizard, 188; as Omen, 196.
Loom, Lengua Indians, 284.

Lovibond's Tintometer, 230 *sqq.*
 Lueddeckens, Dr. Fritz. "Rechts- und Linkshändigkeit" (*rev.*), 84.
 Luschan, Professor F. von. "Vorschläge zur Geographischen Nomenklatur der Südsee" (*rev.*), 119.
 Lustre, 78.
 Luzon, 216.
 Lyle, T. H. "Celadon Ware," 41.

M.

Mace, A., 238.
 Macdonell, Prof. A., "The late Prof. Max Müller," 16.
 MacKinlay, W. E. W., Memorandum on the Language of the Philippines, 214.
 Macnamara, N. C. "Origin and Character of the British People" (*rev.*), 151.
 Madangs, 212.
 Magic, Sarawak, 178; Lengua Indians, 290.
 Malay, Damascening, 163; Family of Languages, 214; Goldsmith's Tools, 165; Goldsmith's Moulds, 165; Kris, 161; Metalwork, Notes on, by Walter Rosenhain, B.A., 161 *sqq.*
 Mallet, J. W., 265.
 Man, Preliminary Announcement of, 4.
 Manipur, The Native Tribes of, by T. C. Hodson, 300.
 Manguian, 217.
 Maories, 98.
 Marriages, by Capture, Manipur, 305; of Elder Brother's Widow, 305; by Purchase, Manipur, 305.
 Masonry, Tunis, 109.
 Matt-Malerei, 78.
 Maui, 148.
 McCarthy, J., "Surveying in Siam" (*rev.*), 12.
 McDougall, W., and C. Hose. "Relations between Men and Animals in Sarawak," 173.
 Measurement of Papuan Skulls, by J. Gray, 261.
 Medicine Man, Malay Peninsula, 143; New Britain, 167; Sarawak, 202.
 Meitheis, Manipur, 300.
 Melek Taus, 122.
 Metal work, Notes on Malay, by W. Rosenhain, 161.
 Metallurgy, Copper Celts, 265; Copper Celts, analysis of, 266; Cornish Copper Ore, 270, 271; European Copper Ores, 268; Irish Copper, 265; Spanish and Parazuelos Copper Ore, 269; Tin in Irish Copper Ore, 272; Tin in Egyptian Copper Ore, 268.
 Meyer, A.B., and Parkinson, R., "Papua, Album ii" (*rev.*), 117.
 Middens, Canada, 133.
 Migration, Polynesian, 110.
 Milanos, swords of, 225.
 Mitchell, P. C., Life of Huxley (*rev.*), 63.
 Moko, Amoco, 29.
 Monkey, Long-nosed, 191.
 Montelius, Dr. O., 88.
 Monuments of Persian dynasty in Egypt, El Khargeh, 91.
 Mortillet, G. de, 114.
 Moulds, Malay, 165.
 Müller, Dr. Sophus, 88.
 Murray Island, Colour Sense, 87.
 Murray Islanders, Taste, 246.
 Murray River, Strangling Cords from, 94.
 Mürûts, Parang of, 225.
 Museums. Additions to British Museum, 17, 39, 57; Blackmore, 313; Dublin, 265 *sqq.*; Pitt-Rivers, 315.
 Music, Savage (*rev.*), 118; Lengua Indians, 293.
 Musical Instruments, Lengua Indians, 293.
 Mutilations at death, 295.
 Mycenaean Age, 139; Athens, 70; Crete, 148; Cyprus, 130, 138.
 Myers, Dr. C. S., "On Four Photographs from the Oasis of El Khargeh," 91; "The Bones of Hen-Nekht," 127, 246.
 Myres, J. L., 139; Contemporary Survival of successive styles of Art, N. Africa, 83; Early Masonry, Tunis, 109; Glaze or Varnish, 78; Maltese Pottery, 71; Notes on Mycenaean

Chronology, **139**; Pre-Mycenæan Athens, **70**.
 Mythology, Iroquois, **134**; Lengua Indians, **288**; Sarawak, **191, 193, 197**.
 Myths, New Hebrides, **148**.

N.

Nagas, **300**.
 Nagel's test for colour blindness, **230 sqq.**
 Names, Ashanti, **101**; Manipur, **304**; Sarawak, **195**; Roas, Dr., **212**.
 Nasal Index, Egypt, **251**.
 Native Tribes of Manipur, The, by T. C. Hodson, **300**.
 Nature Deities, **212**; Manipur, **303**.
 Necropolis, El Khargeh, **91**.
 Neolithic Trephining, **171**.
 New Britain (Neu Pommern), **167**; Medicine Man, **167**.
 New Guinea, Bow-and-arrow Fleam, **121**; German, **261**; **117**.
 New Ireland (Neu Mecklenberg), **168**.
 New Zealand (*rev.*), **98**; Forgeries, **92**.
 Newton, W. M., Flint Implements, **66**.
 Niabor, Sea Dyak Parang, **222**.
 Nicknames, **304**.
 Niebuhr, C., "The Tel-el-Amarna Period" (*rev.*), **141**.
 Nile Welle Watershed, Notes on Crania from, by F. C. Shrubbsall, M.A., M.B., **256**.
 Nomenclature, Glaze or Varnish, **78**; of peoples of Manipur, **300**.
 Norway, Folklore, **79**.
 Numerals, **296**.
 Nyarong or Spirit Helper, **173, 199-202, 210**.
 Nyassa, Lake, **112**.

O.

Obituaries, **18ff.**
 Obituary, Max Müller, **16**; Sir C. Peek, **96**.

OCEANIA—

Australia, **143**; Strangling Cords, **94**; Swan-neck boomerang, **27**; Ethnological Expedition, **67, 143**; Bismarck Archipelago, Tanz-objecte

(*rev.*), **47**; Bow and Arrow Fleam, **121**; Bugi tribe, **36**; Despatches (*rev.*), **36**; Easter Island Tablets, **7, 7**; Feathered arrows, **32**; Fijian forgeries, **56**; Fiji, "vasu," **136**; Frigate bird as art motive, **64**; Kiriwina group, **36**; Lord Howe's Island, Tatu patterns, **31**; Maori Tatu, Moko (*ill.*), **29ff**; Measurements of Papuan skulls, **261**; Morehead R. tribes, **36**; Murray Islands, **239, 246, 87**; New Guinea, **117; 121**; New Hebrides, Memorial Heads, **51**; New Zealand, vegetation spirit, **157**; Niué, natives, **137**; Papuan element in New Zealand, **51**; Polynesian Migration, **111**; Savage Island, natives of, **137**; Solomon Isles, **81**; S., Bambu Mimpels, **28**; S., Stories from, **147**; Tonga, **110**; Torres Straits, **136, 137**.

Odour, Racial, **29**.

Omens, **162, 177, 178, 192, 200, 302, 304, 307**.

Omen Birds, **179, 195, 197, 198**; Arachnothera chrysogenys, **179**; A. Modesta, **179**; H. Duvancelii, **180**; H. Kasumba, **180**; Hawk, **175-9**; killing of, **198**; Hornbill (Anorrhinus comatus), **180, 198**; Spider-hunter, **179**; Woodpecker (Lapocestes porphyro Melas), **180**.

Orang-utang as omen, **188**.

Ornament, animal derivatives as, on crossbeams, **191**; Kumasi, architectural, **101**; Lengua Indians, **287**; Patterns, Lengua Indians, **284**; Malay House, **142**; on Pottery, Khami ruins, **82**; Women's, Sarawak, **224**; Solomon Isles, **81**.

Ornamentation, Sarawak, **191**; celts, **276**; swords, Land Dyaks, **226**; sword blades, Sarawak, **219-228**; Crete, **146**; of Walls, Khami ruins, Rhodesia, **82**.

P.

Pacific, **80**; Forgeries, **93**; Nomenclature (*rev.*), **119**; Ocean, Islands of (*rev.*), **103**.

- Painting, Lengua Indians, 283; El Khargeh, 91.
- Palæolithic Implements from Savernake, a collection of, 310.
- Pampango, Language, 216.
- Pangasinán Language, 216.
- Papua, Gulf of, 261.
- Papuan Skulls, Measurement of, 261.
- Parang, 219-228.
- Parkinson, R., and Meyer, A. B. "Papua, Album, ii" (*rev.*), 117.
- Peek, Sir C. E., 96.
- Pelandok (Mouse-deer), and Tekora (Land tortoise), Character of, in Fable (Sarawak), 199.
- Penka, Dr., "Die Ethnologisch-Ethnographische Bedeutung der Megalithischen Grabbalen" (*rev.*), 88.
- Perham, Archdeacon, 196, 197, 212.
- Personal Ornaments, Lengua Indians, 282; Sarawak, 188.
- Pests, prevention of, by Clay Image of Crocodile, Sarawak, 199.
- Petara, 196.
- Petras, site in E. Crete, 148.
- Petrie, W. M. F., 123, 138, 139, 238; An Egyptian Ebony Statuette of a Negress, 107; Egyptian Cutting Tools, 120; The Races of Early Egypt, 248.
- Philippines (*rev.*), 149.
- Philippines, Memorandum on the Language of, by William E. W. MacKinlay, 214-217.
- PHYSICAL ANTHROPOLOGY:—Algeria, Libyan Notes, 62; Anthropometrical Observations of Dòmbs, 29; Birth Rate, Yakut, 79; Bones of Hen Nekt, 127; Brain, 126; Bushman Skull, 58; Cephalographs, 113; Childbirth, 80; Crania, cf. Skull, Craniometry; Crania Ethnica Philippinica (*rev.*), 149; Dòmbs of Jeypur, 29; Egypt, Physical Type, 248-255; Fertility of Dòmbs, 29; Instruments, Cephalometric, 111; Lefthandedness (*rev.*), 84; Lengua Indians, Physical Characteristics, 281; Measurement of Inhabitants of El Khargeh, 91; Nile Welle Watershed, Crania from, 256-260; Palmistry, 20; Papuan Skulls, Measurement of, 261-264; Physical Type, Manipur, 300; Early Egypt, 127; Pigmentation of Dòmbs, 29; Scotland, 128; Race Improvement, 132; Racial Types, Malay Peninsula, 142; Retzius, G., Crania Suecica (*rev.*), 59; Savoy (*rev.*), 38; Skulls, from Azandeh, 256; Akka, 259; of Bam-bute Pigmy, 260; of Bari Tribe, 256; English, 125; Niam-Niam, 256; Monbottu, 256; Intermixture with Dwarf Races affecting size of, 259; Stone Age, etc., 59; Sweden, Crania Suecica, 59; Tendency of clans to retain physical characteristics, Scotland, 128; Trepanning, 65.
- Pig, 174, 180-2, 195, 307, 308; Wild, 207; jaw of, as charms, 182, 210.
- Pilecomayo River, 289.
- Pigmentation, 128; for Tatoo, 42.
- Pigmy Tribes, traditions of, Lengua Indians, 289; Central Africa, 259-60.
- Pitt-Rivers, Gen., on Celts, 279; Museum, 315.
- Pittard, Trépanation Préhistorique, 65; Ethnologie de la Savoie (*rev.*), 38.
- Pollok, J. H., 266.
- Poltergeist, 101.
- Portraiture, ancient, 248.
- Post-mortem Moko, 44.
- Pottery, Arab, 83; Arabized Berber, made by hand, 83; Crete, 146, 147; Khami Ruins, 82; Late Græco-Roman Type, North Africa, 83; Lengua Indians, 285; Malay Peninsula, 142; Painted, 78, Process of Decorating; Torres Straits, 95.
- Praesos, 146.
- Presents, exchange of, 68.
- Primogeniture, Manipur, 300.
- Proceedings of the Anthropological Institute, 1, 76, 89, 90, 106, 152, British Association, 131; Société d'Anthropologie de Paris, 75, 89, 90, 105, 120.
- Prohibitions, Manipur, 306, 308.
- Pulang Gana, Deity of rice culture, 198.
- Punans, 195-6, 204.

Puran Delta, 261.
Purification, Spiritual, 303.
Pyrrhi Æthiopes of Ptolemy, 256.

Q.

Quibell, J. E., 231.

R.

Race Improvement, 132.
Races of Early Egypt, The, by W. M. Flinders Petrie, D.C.L., 248.
Rainfall, Ceremonies to Procure, 302;
Use of Fire to Procure, 308.
Randall-MacIver, D., 127, 229, 230, 231, 238; El Amrah Cemetery, 40;
Libyan Notes (*rev.*), 62.
Ray, S. H., Stories from Southern New Hebrides, 147.
Read, C. H., Relics from Chinese Tombs, 15; Presidential Address, 9 (*rev.*), 116.
Rechts und Linkshandigkeit (*rev.*), 84.
Reeves, W. P., The Long White Cloud (*rev.*), 98.
Reincarnation, 308.
Religious Beliefs, Lengua Indians, 288.
RELIGION.—

Africa:—Baptism, Baganda, 119;
Burial, 127; Burial Customs, Egyptian, 40; Customs, Baganda, 117; Disease, Ideas of, 124; Fear of Dead, 126; King, skull of, dried, 129; King, Death of, 129; Leechcraft, 126; Sacrifice, human, 129; Soul, Animal form of, 139; South Africa, 21; Spirits, evil, 125; Spirit of King, 130; Tabu, 134; of tatuing, 121; as to Women, 121; between Relatives, 124; Tabus, mourning, 127; Tabus of pregnancy, 119; Totems, Baganda, 117; Bantus, 111; Wedding Customs, Baganda, 122; Witchcraft, 125; Women, superstitions as to, 121.

America:—Animal Cults, Lengua Indians, 288; Ancestors and Agriculture, 158; Corn spirit, 155;

Lengua Indians, 288; Sacrifice, Human, and Agriculture, 158; Totems in America, 134; White Dog sacrifice, 33.

Asia:—Animal Cults, Sarawak, 175–9, 194, 196, 198, 200, 201, 206, 208; Anthropomorphism, Sarawak, 175; Ancestor Worship, 303, 304; Asia Minor, 122; Astronomical Superstitions, 107; Auspicia, 175 *sqq.*; Balli, 175; Beating, Magical Practice, 134; Buddhism, Siam, 99; Buddhist Wheel of Life, 1; Buffalo, Sacrifice of, at a father's Burial, 307; Burial Customs of Dômb's, 29; Burial Customs, Yakut, 98; Manipur, 305; Lengua Indians, 295; Childhood, Superstitions as to, 80; Deities, Yakut, 106; Dead, Fear of, 100; Distinction between Deities for Men and Women, 175; Divination, 107; Dômb's of Jeypur, 29; Eggs as Offerings, 185; Eponymous Tribal Deities, 303; Exogamy, 87, 204, 303; Extispicia, 185, 181–198; Exorcism, 105; Familiar Spirits, 102; Feathers as offerings, 185; Fire, Beliefs as to, 106; use of, to procure rain, 308; First Fruits, 29; Forms of Animals assumed by Deities, 198; Fraternities Resembling Thiasoi, 122; Future Life, Ideas of, Yakut, 97; Belief in Future World, Manipur, 307; God evolved from Offering, 133; God of War, 212; Gohei and Inao, 131; Harai, Purification, 132; Hastening of Death, 295; Horse Worship, 84; Leechcraft, 104; Love in Marriage, 97; Magic, Georgian, 42; Manipur, 302; Medicine Man, Malay Peninsula, 142; Metal and Dead, 99; Mutilations at Death, 295; Nature Deities, Manipur, 212; Nusa, 131; Sacerdotal Office, Manipur, 301; Sacrifice before Clay Image, of crocodile, 198; Sacrifice, Burial, 98; Sacrifice—Domestic Animals, Sarawak, Fowl, 176 *sqq.*; Fowl, as substitute for human, 208; Pig,

- 177, 190 *sqq.*; Pig, in place of Slave, 208, 209; Pig, blood of, sprinkled on altar, 209; Sacrifice, Human, 207, 208; Sacrifice, Sarawak, 176 *sqq.*; Shadows, beliefs as to, 107; Shamanism, 99, 102; Shintoism, 131; Smiths as Shamans, 104; Snake-god, Manipur, 302; Soul, bath of the, 99; Soul catching, 185; Soul, future life of, 100; Souls of inanimate objects, 107; Spirits, Manipur, 306; Spiritual purification, 303; Spirits, Sarawak, 177; Supreme Being, Sarawak, 174, 189, 196, 208, 211, 213; Symbolism to procure rain, 308; Tabu, 134; Tabus, food, 29; Totem worship, Sarawak, 202-213; Totem worship, origin of, 210; Tombs, Chinese, 15; Tree, burial under, 100; Violent Death, fate of those who die, 101; Wedding Ceremonies, Yakut, 81; Dômbes, 29; Women as Shamanesses, 103.
- Europe:—Acts of St. Dasius, 53, 68; Greece, 86; Totemism in, 86, Knievogue, 11; Saturnalia, 53, 68; Sun worship, 79; Totemism, South Hants, 124.
- Oceania:—Bullroarer, Maori, 59; Burial Customs, 142; Circumcision, 140; Future Life, Niné, Ideas of, 139; Initiation, 140; Matuatonga, note on, 30; Memorial Heads, 51; Niné, Myth of Origin, 139; Niné, Religion of, 139; Priesthood, 139; Tabu after tatuing, 43; Totemism, 139; Tutelary Deities, 139; Witchcraft, 140. V. also Frazer, Spirit of Vegetation, etc.
- Rhodesia, 82.
- Rhys, J. Celtic Folklore (*rev.*), 44; Wells in Ireland, 11.
- Rice, Cultivation introduced into Borneo, 203.
- Ridgeway, Prof. W., 130.
- Risley, H. H., "On an Improved Method of measuring the Vertical Proportions of the Head," 144.
- Rivers, Dr. W. H. R., Colour Vision of the Eskimo (*rev.*), 87; of the Natives of Upper Egypt, 229, 136, 137; On the Functions of the Maternal Uncle in Torres Straits, 136; On the Function of the Son-in-law and Brother-in-law in Torres Straits, 137.
- Roberts, Dr., of Cambridge, 313.
- Robinson, Rev. Canon, Nigeria (*rev.*), 6.
- Roscoe, Rev. J., Notes on the Baganda, 117.
- Rosenhain, W., 142; Notes on Malay Metal-Work, 161.
- Roth, H. Ling, 93; Pacific Forgeries, 56; Maori Tatu and Moko, 29ff.
- Rymers or Bowers, Stone, 312.
- S.
- Sacerdotal Office, Hereditary, 301.
- Sacrifice, Human, 207-208; Domestic Animals: Fowl, 176, 177, 178, 190, 192, 199, 200, 208; Fowl, as Substitute for Human Sacrifice, 208; Pig, 177, 190-192, 199, 207, 208; Pig, in place of Slave, 208, 209; Pig, Blood of, sprinkled on Altar, 209.
- Salt, Lengua Indians, 287.
- Sarawak, Relations between Men and Animals in, by C. Hose and W. McDougall, 173.
- Sarawak Tribes, a Provisional Classification of the Swords of, by R. Sheldford, 219.
- Savage Island Natives, Origin of, 138.
- Savernake, On a Collection of Palæolithic Implements from, 310.
- Sayce, Prof. A. H., 122; "Babylonians and Assyrians" (*rev.*), 25.
- Scalping, Traditions of, 289.
- Schleswig-Holstein, Bronze Age (*rev.*), 83.
- Schmeltz, Dr. E., "Album of the Ethnography of the Congo Basin" (*rev.*), 116.
- Schurtz, Dr. H., "Urgeschichte der Kultur" (*rev.*), 102.
- Scotland, Pigmentation, 128; Surnames, 128.

Scott, J. G., and Hardiman, J. P.,
Gazetteer of Upper Burma (*rev.*),
150.

Scraper and Dagger, Lake Nyassa. 112.

Sculpture, Crete, 148; Kumasi, 101.

Sébillot, Paul, "Le Folklore des
Pêcheurs" (*rev.*), 140.

Seclusion, Manipur, 306; After Child-
birth, 304; After Death of Domestic
Animal, 306.

Sequence, Dates, 249; Numbers, junc-
tion of, with History, 249.

Sethe, Dr. K., "Sesostriis" (*rev.*), 24.

Sharpe, A., Carved Stool, etc., 39.

Sheath, Parang, Sarawak, 219-228.

Shelford, R., "A Provisional Classifica-
tion of the Swords of the Sarawak
tribes," 219.

Shrubsall, F. C., "Notes on Crania from
the Nile Welle Watershed," 256.

Siam (*rev.*), 99.

Sieroshevski, Prof. M., The Yakuts, 65ff.

Signs, Lengua Indians, 206.

Skeat, W. W., 79; "A Modern trace
of Sun-worship in Norway," "Ethno-
graphy of the Malay Peninsula," 142,
161 *sqq.*

Skull, Akka, 259; Azandeh, 256; Bari
Tribe, 256; Bambute Pigmy, 260;
Human, England, 125; Monbottu,
256; of New Zealander at Blandford
Museum, Salisbury, 172; Niam-Niam,
256; Papuan, Measurement of, 261;
Papuan, carved, 261; Peruvian, tre-
phined by boring, 171; Size of,
affected by Intermixture, 259; South
Seas, 167-172; from Worthing, 171;
from Zereiba country, 256.

Slaves, as a fine for firing a house,
207; Sacrifice of, 208; treatment of,
Sarawak, 208.

Sling, New Britain, 167.

Slip, definition of, in Pottery, 78.

Smear, definition of, 78.

Smelting, Primitive, Spain, 271.

Smith, Robertson, 177.

Smith, Tools of Malay, 161 *sqq.*

Smith, W. W., 92.

Snake-god, Manipur, 302.

Snake Personification, Manipur, 304.

Snakes as Omens, 192.

Socialistic Ideas, Lengua Indians, 287.

SOCIOLOGY.—

Africa:—Adoption, 119; Descent,
119; Exogamy, 121; King, death
of, 128; Marriage, Baganda, 122;
Princesses, position of, 122; Rela-
tives, tabus between, 124; Royal
women not tatued, 121; Tribes,
Baganda, 118; Widowhood, 124.

America:—Government, Lengua In-
dians, 291; Socialistic Ideas, Lengua
Indians, 287.

Asia:—Authority of Chief, 174;
Betrothal, 87; Birth Rate, etc., 79;
Blood Feud, 72; Bride Price, 84;
Communism, Yakut, 70; Economic
Unit, Yakut, 65; Endogamy, 88;
Exogamy, 87, 204, 303; Exogamy
of Dômbis, 29; Family, Ancient
Type of Yakut, 75; Family, Head
of, 78; Group Marriage, 91; Infan-
ticide, 301; Incest, 90; King,
Position of, Manipur, 300; Labour
and Capital among Yakuts, 66;
Land System, Yakut, 74; Marriage
by Capture, 85, 304; Marriage by
Purchase, 304; Marriage Dômbis,
29; Marriage, Yakut, 81; Matri-
archy, 75; Old people killed, 100;
Old, treatment of, among Yakuts,
76; Parents, children, Yakut, 76;
Pastoral stage, 70; Paupers, Yakut,
69; Primogeniture, Manipur, 300;
Property, ideas of, 70; Property,
descent of, 78; Relatives by mar-
riage, 93; Relationship, Terms of,
109; Rule of succession, Manipur,
300; Sexes, Relations of, 96;
Shamans, Blood Relationship of,
102; Sib, protection extended by
woman's, 95; Sib, Yakut Social
Unit, 68; Tribes, Dômbis, 29;
War, 72; Wife, Position of, in
Husband's Sib, 95; Women, Status,
85; Yakut organization, 65 *sqq.*

Oceania:—Abortion, 140; Brother-
in-law, 137; Infanticide, 141;
Law and Justice, Niué, 143; Mater-
nal Uncle, 136; Niué, institutions

of, 138; Property, Niué, 143; Son-in-law, **137**; Tatuing as a mark of rank, 48; Warfare, Niué, 142.

Solomon Isles, Ornaments from, **81**.

Soothsaying, Manipur, 304.

Soul-catching, Sarawak, 185.

Spear, Lake Nyassa, **112**.

Spear-head, Burma, **77**.

Spencer, Professor Baldwin, **143**.

Spirits, Annexation of Unnamed Child by, 304; Malignant, Manipur, 304; Offerings to, Manipur, 303; Sarawak, 174.

Spiritualism, **135**.

Splieth, Dr. W., "Inventur der Bronzealter Funde aus Schlerwig-Holstein" (*rev.*), **85**.

Stain, **78**.

Statuette, an Egyptian Ebony, **107**.

Steindorff, Grabfunde der Mittleren Reichs (*rev.*), **61**.

Stick, Frayed, 176; Keeping of Diary by, Lengua Indians, 286.

Stone Age, Cretan, **146**.

Stones, Hammer, 312; Throwing, 312; Wedge-shaped, 312.

Strangling Cords from the Murray River, **94**.

String, Lengua Indians, 285.

Stumme, Dr. H., Handbuch der Schilhischen (*rev.*), **45**.

Succession, Rule of, Manipur, 300.

Suhin, 281.

Sully, Professor, 245.

Sumner, W. G. The Yakuts, 65ff.

Sun-worship, **79**.

Superstitions, Lengua Indians, 290.

Supreme Being, Sarawak, 174, 189, 196, 208, 211, 212, 213.

Surnames, Scotland, **128**.

Sweet, Dr. H., History of Language (*rev.*), **50**.

Swords of the Sarawak Tribes, a Provisional Classification of, by R. Shelford, 219.

Swords, Sarawak, peculiar cuts of, 228.

Symbolism to procure rain, Manipur, 308.

Symington, Professor J., "On the Temporary Fissure of the Human Cerebral Hemisphere," **126**.

T.

Tabu, Manipur, 303.

Tagalo, Language, 214.

Tahennu, 250.

Tama Bulan, 175.

Tammuz, **122**.

Taste, Murray Islanders, 246.

Tatu, 29ff; Ashanti, **101**; Dômba, **29**; Maori, **98**.

Taus, **122**.

TECHNOLOGY:—

Africa:—Arrow-heads, Stone, **82**; Axe, **112**; Basketry, Egyptian, **40**; Copper Dagger, Egyptian, **40**; Cutting Tools, Egypt, **123**; Dagger and Beer Ladle, **112**; Dolls, Egyptian, **40**; Doorpost, carved, **57**; Dress, Early Egypt, 253, 254; Habitations, Early Egypt, 253; Keloids, 120; Masonry, Tunis, 109; Pottery, Arab, **83**; Scraper and Dagger, **112**; Smoking Pipes from Natal, **10**; Spear, **112**; Stone Implements, **40**; Stool, Gong, etc., E. African, **39**; Textile Fabrics, **123**; Textile Fabrics, Cutting Tools for, **123**; Tombs, Egyptian, **40**; Tobacco Pipes, Natal, **10**; Trumpets, Bambu, **28**.

America:—Arithmetic, Lengua Indians, 296; Axes, Stone, Lengua Indians, 294; Basket-work, California, **17**; Lengua Indians, 284; Bow, Lengua Indians, 294; Dyeing, Lengua Indians, 285; Habitations, Lengua Indians, 283; Leather, Lengua Indians, 285; Loom, Lengua Indians, 284; Musical Instruments, Lengua Indians, 293; Pellet Bow, Lengua Indians, 294; Pottery, Lengua Indians, 285; Tatuing, Lengua Indians, 283; Tobacco Pipes, Lengua Indians, 286; Weaving, Lengua Indians, 284.

Asia:—Celadon Ware, **41**; Celt, Socketed, Burma, **77**; Cera Perduta process, 165; Chains, Making of, by casting, 185; Clothing, Sarawak, 174; Cloth making, **142**; Cross-

- beams, 191; Damascening, 163; Habitations, Sarawak, 174; Jaggery, **142**; Keloids, 62; Kris, Making of Malay, 161; Leechcraft, 104; Malay Goldsmith's Tools, 165; Metal-Work, Malay, 161; Pottery, Chinese, **54**; Swords, Sarawak, 219-228; Tatuing, Animals, 202; Tatuing, Dômb, **29**.
- Europe:—Celts, Bronze, Irish, 266; Copper, Irish, 265; Stone, 273; Flint Implements, Kentish, **66**; Guilloche Pattern, **4**; Pottery, Maltese, **71**.
- Oceania:—Arrows, feathered, **32**; Boomerang, swan-neck, **27**; Bow and Arrow-heads, **121**; Celt, Tonga, **110**; Dress, Niné, 145; Instruments, tatuing, 36ff; Leechcraft, 141; Memorial Heads, **51**; Midwifery, 141; Moko, Maori, 29ff; Moko, Post-mortem, 44; Stone, Matuatonga, **30**; Strangling Cords, **94**; Tatn, Maori (*ill.*), 29ff; Lord Howe's Island, **31**. *V.* also Ornamentation, Pottery, etc.
- Tekora (land tortoise) and Pelandok (mouse deer), Character of, in Fable (Sarawak), 199.
- Tel el Amarna (*rev.*), **141**.
- Textile Fabrics, Cutting Tools for, **123, 125**.
- Theall, Dr. G. McCall, **111**.
- Thieullen, A., **124**.
- Thoas-worship in Asia Minor, **122**.
- Thomas, N. W., Suggestions for an International Bibliography, **108**; American Parallels to European Agricultural Customs, 155; The Spencer - Gillen Expedition, **67**; Animal Folklore in Georgia, **42**; Buddhist Wheel of Life from Japan (Pl. A), **1**.
- Thompson, R. C., Animal Folklore in Georgia, 42; Reports of Babylonian Magicians (*rev.*), **9**.
- Thomson, Basil, A Stone Celt from Tonga, **110**; Natives of Savage Island, 137.
- Tiger Cat, 199.
- Tin, in Irish Copper Ore, 272; in Copper Ore, Egypt, 268.
- Tobacco, Lengua Indians, 287; Tobacco Pipes, Lengua Indians, 286, 287; from Natal, **10**.
- Tocher, J. F., F.I.C., **128**.
- Tombs, Megalithic, **88**; Rock-cut, Tunis, **109**.
- Tonga, Celt from, **110**.
- Tóóthli, 281.
- Torres Straits, Brother-in-law, **137**; Son-in-law, **137**; Maternal Uncle, **136**; Pottery, **95**.
- Totem, Clan, 211; Individual, 210, 211; Worship, origin of, 210; Worship, Sarawak, 202.
- Totemism, America, **134**; Greek, **86**; South Africa, **111**; South Hampshire, **124**.
- Tradition, Manipur, 300; Scalping, 289.
- Traditions of Cannibalism, 288.
- Traps, 294.
- Treasurer, Report of, 6.
- Tregear, E., Spirit of Vegetation, 159.
- Trenggānu, 161.
- Trepanning, Bronze Age, **68**.
- Trephining, Neolithic, 171; in the South Seas, by the Rev. J. A. Crump, 167.
- Tribal Marks, African, **57**.
- Tribe, Definition, 309.
- Tripoli, **83**.
- Twigs, Divination by, Manipur, 308.
- U.
- Urgeschichte der Kultur (*rev.*), **102**.
- V.
- Vampires, Manipur, 304.
- Varnish, **78**.
- Verschuur, G., "At the Antipodes" (*rev.*), **60**.
- Vergôdendêl, **115**.
- Virchow, Prof., 257.
- Visaya language, 215.
- Visick, Dr. Hedley, 310.
- Visser, M. W. de, "De Græcorum Diis non referentibus speciem humanam" (*rev.*), **86**.

Index.

W.

Waddell, "Among the Himalayas" (*rev.*), 49.
War, God of, 212.
Weapons, buried with dead, 306; Early Egypt, 253; Kenyabs, 174.
Weaving, Lengua Indians, 284.
Webster, W. D., 261.
White, Franklin, Ruins of Khami, 82; Ruins of Dhlo-Dhlo, 21ff.
White Metal, 165.
Wilde, Sir William, 264.
Wilkin, A., 230; "Libyan Notes" (*rev.*), 62.
Willett, Edgar, On a Collection of Palæolithic Implements from Saver-nake, 310.
Winch, W. H., 246.
Witchcraft, Lengua Indians, 290.

Witch Doctor, Lengua Indians, 288.
Women, Tatuing of, 32.
Woodford, C. M., 81; Tatu Patterns, 31.
Wood-Hill, H.
Worship of Eponymous Ancestor, 303.
Worthing, Skull from, 171.
Wright, Rev. R. Stewart, 112.
Writing, Ægean Script, 52; Lengua Indians, 286; Prehistoric, Systems of, 145.

Y.

Yezidi, Rite of, 122.
Young, E., "The Kingdom of the Yellow Robe" (*rev.*), 99.

Z.

Zereiba Country, Skulls from, 256.









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